Invalid Diet.

When a patient has been pulled down by illness and left with digestion weakened and without appetite, it is difficult to select just the right diet to enable him rapidly to regain his former vitality, so that the danger of relapse may be quickly passed over, and the period of convalescence shortened. A food is wanted which

Will tempt the appetite.
Is highly nourishing.
Requires no effort to digest.

The best Invalids' Food is

PEPTARNIS

the new Peptone of Beef recently brought out by Liebig's Extract of Meat Company, Limited. It combines all the above qualities, and is inexpensive.

USED AT LEADING HOSPITALS AND INFIRMARIES.
INVALUABLE FOR DYSPEPSIA.

Of all Chemists and Grocers,

1/-, 1/9, 3/3.

A Rational Dietary for Infants.

This series of Foods has been designed to supply for the first time a need in the rational dietary of infants fed by hand. None of the substitutes for mother's milk have hitherto been physiologically accurate. Especially is this so with the diluted cow's milk given usually in the earlier days of infant life.

The following Table enables one to appreciate the difference between—

Cow's Milk—as sold in Towns.		Human Milk—direct from Breast.	
Reaction.	Acid	Reaction.	Alkaline
Specific gravity	1·031	Specific gravity	1·027
Water	87·0	Water	87·5
Fat	3·5	Fat	3·8
Casein	3·0	Casein	1·0
Albumin	0·5	Albumin	1·2
Milk Sugar	4·5	Milk Sugar	6·2
Bacteria	very numerous	Bacteria	absent

Thus cow's milk contains an excess of casein which curdles in the infant's stomach, and a deficiency in soluble albumen and sugar. Condensed milk, on the other hand, contains an excess of sugar, but a decided deficiency in fat and soluble albumen, and a slight deficiency in casein. We have therefore endeavoured successfully to produce two complete Foods which are, physiologically, practically the same as the mother's milk. These are

The "Allenburys" Milk Food, No. 1.

which is prepared in the form of a powder, is made from fresh cow's milk, from which, after the proximate composition has been ascertained, the excess of casein is removed, and the deficiency in fat, soluble albumen, and milk sugar corrected. The method of preparation renders this food sterile, and boiled water alone is required in preparing it for use.

Infants reared by hand should be brought up on this food until they are three months old.

If the child be strong and able to assimilate the food, it is advisable to now begin using

The "Allenburys" Milk Food, No. 2.

This food, to meet the increasing requirements of the digestive apparatus, contains, besides the constituents of "First Food," maltose, with a small proportion of dextrine, together with soluble phosphates derived from whole meal. There is, however, no unconverted starch left in the food which at this age the infant would be unable to digest.

Experience has shown conclusively that after five or six months the infant can be most advantageously reared on

Allen & Hanburys' "Malted Food."

This has been manufactured by us for many years after the formula of Liebig, but by improved methods. The basis of the food is fine wheaten flour rich in nitrogen, with this advantage, that a large proportion, but not all the starch, is converted by the action of Malt Extract. The proportions are so arranged that the infant economy is not paralysed, as with some foods, by having everything digested for it, while on the other hand it is not given too much starch to digest. This food can be most successfully given when the mother's milk is beginning to fail both in quantity and richness, without the child being actually weaned. In this way a gradual transition can be effected from the natural to the full use of the artificial food.

It has been found already that this series of desiccated foods have proved invaluable on board ship, especially in the case when children have to be taken at an early age to India. It is found that owing to their careful preparation the foods keep well in hot climates, and the infant is shielded from the risk of bacterial infections by polluted milk. All risk is removed if only the water used be sterilised by well boiling.

Pamphlet with Testimonials on application.

Allen & Hanburys Ltd., London.

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West End House—Vere St., W. *Cod Liver Oil Factories*—Longva and Kjerstad, Norway.
Depôt for Australia—484, Collins St., Melbourne.

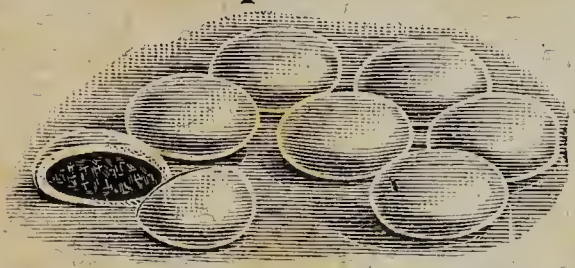
See also Pages ii, iii, 425, and 439.

Some Modern Pharmaceutical Methods

BY

Allen & Hanburys Ltd.

Compressed Tabellæ and Hypoderms



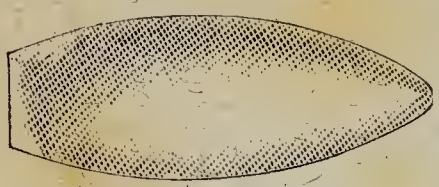
Cascara Sagrada Tabellæ (Sugar-coated).

Exhibit the drug in its purest form, the solution of which is not retarded by gums and other adhesive excipients. They are so prepared as to readily disintegrate, and in the case of nauseous drugs, such as Cascara, are sugar-coated. Accuracy of dosage is ensured, and the fact that they are sold in little vinaigrette bottles enables the patient to carry his medicine in his vest pocket. All important drugs, as well as the animal extracts, are put up in the form of Tabellæ.

"*Experience has shown that even the insoluble* Bismuth and Sulphur Tabellæ completely disintegrate in cold water in twenty seconds."—*The Hospital.*

Pessaries and Suppositories.

A new form of Suppositories, which presents great advantages. The form hitherto in general use has been conical. This shape, which we have designed and registered, is largest about the middle, and tapers towards each end, the apex being pointed and the base being truncated. When a Suppository of this form has been introduced as far as its greatest diameter, the pressure of the sphincter at once carries it forward into the rectum, and the inconvenience and discomfort to the patient of having to push it far in against the pressure of the sphincter is obviated. This is of special importance in the use of Nutrient Suppositories requiring to be frequently administered. They are made with cacao butter, or non-greasy base.



Registered No. 180047.
Suppository of Improved Shape.

Suppositories, **8d.** per dozen; Pessaries, **1/6** per dozen; Bougies, **2/-** per dozen.

Cachets

Are carriers of wafer paper for the administration of bulky or nauseous powders, as Salipyrin, Quinine, &c.

Dipped in water, they readily soften, and can then be easily swallowed.

Put up in boxes at **1/-, 2/6,** and **3/6** (retail).

Chrismoids

Are Gelatine Capsules, containing Antiseptic Ointments, the base of which is an inoxidisable hydrocarbon. They are invaluable in obstetrical practice and catherisation.

☞ As each of the above sections represents a large group of preparations, ALLEN AND HANBURYS will be pleased to forward on application detailed lists containing many hundreds of formulæ, and in most cases samples of any special preparations to which a physician may wish to give a trial.

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Depôt for AUSTRALIA—484, COLLINS ST., MELBOURNE.
See also pages i, iii, 425, and 439.

"The maintenance of Nutrition is the Keynote of the successful treatment of Phthisis."—
THE LANCET.

Bynol. The "Perfected" Malt & Oil.

PHYSIOLOGY.

This can be best considered by taking separately its two constituents :—.

1. The Malt Extract used contains an amylolytic ferment called diastase, of the fullest activity. Its special function of converting starchy foods into a soluble sugar which can be easily absorbed renders this preparation at once invaluable for aiding assimilation. In weakly and cachectic conditions the activity of the natural allied ferment ptyaline becomes greatly deficient, with the consequence that much ingested material is never digested. The Malt Extract being semi-fluid, and possessing a characteristic sweet taste, is therefore physically a very convenient vehicle for emulsifying and disguising the slight taste of the other constituent—Cod Liver Oil.

2. The physiological properties and fate of the latter body are complex; its equivalent in heat-units as regards the animal body is at least two-and-a-half times that of Meat Extract (Liebig); that is to say, it is at least two-and-a-half times as valuable as Meat Extract in maintaining the body weight. Long use has shown that, in atrophic conditions of the absorbing mechanism of the bowel, Cod Liver Oil is not only more easily emulsified, but more easily taken up by the villi of the small intestines and passed on to the lacteals.

In the "Perfected" Cod Liver Oil, where the formation of certain oxidation products irritating to the stomach is avoided, we have perhaps the ideal form of fat-food. Milk, cream, &c., are liable to produce butyric and other allied fatty acids, of little use except to irritate the gastric and intestinal mucous membrane.

To more perfectly understand the part played by Cod Liver Oil, the digestion of fat-foods is roughly as follows :—In the stomach slightly, but chiefly in the duodenum, by the action of the pancreatic ferment, fats are—

1. Emulsified, that is, broken up into minute oil globules, each surrounded by what is known as a haptogen membrane. In this physical state absorption is possible by the villi, the oils being unaltered.

2. Saponified, that is, split into fatty acids and glycerine, both capable of absorption by the intestine.

THERAPEUTICS.

The above considerations enable us to understand more clearly the immense use Malt Extract and Cod Liver Oil, especially in combination, have in wasting diseases.

In Phthisis, for example, the digestive ferments are of lowered activity, and the introduction of a modicum of artificial ferment not only increases the actual amount of food assimilated, but the power of the enfeebled ferments to assimilate.

The almost constant rise of temperature above the normal is maintained chiefly at the expense of the fatty constituents of the body; hence the wasting. This, experience has shown, can best (putting aside questions of hygiene) be combatted by increasing considerably the amount of fat-food and carbohydrate food.

When absorbed, the part played by fat-food is practically two-fold :—

1. It becomes the source from which the surplus fat stored up in various parts of the body may be replenished.

2. Fat-food is one of the chief sources of animal heat, as shown above.

As we have seen, the Cod Liver Oil is the best of the class of fat-foods, especially in an enfeebled condition, and, combined with Malt Extract, as in Bynol, further assists the assimilation of the extra carbohydrate ingested.

That what is physiologically is also clinically true cannot be better illustrated than in the remarks made by the late Sir ANDREW CLARK in a lecture at the London Hospital :—

"I have said that these fibroid cases are poor creatures, thin and white, and have what may be called nutritive debility, and the question is, What am I to do with them? You cannot do better than endeavour to make the patient walk in the way of physiological righteousness. But that sometimes will not do. Some people may be physiologically well behaved, and somehow they do not thrive on it. Can you do anything in those cases? There are two remedies which sometimes do succeed where the ordinary diet will not succeed in nourishing the patient—the one is Cod Liver Oil and Malt given with food—a preparation called Bynol—and the other is the remedy called Bynin Emulsion, consisting of Hypophosphites, Oil, and Malt; both are prepared by Messrs. ALLEN & HANBURYS. These are two good nutritive agents in promoting nutrition."

"A perfect combination of Malt Extract and Cod-Liver Oil."—THE BRITISH MEDICAL JOURNAL.

Allen & Hanburys Ltd., London.

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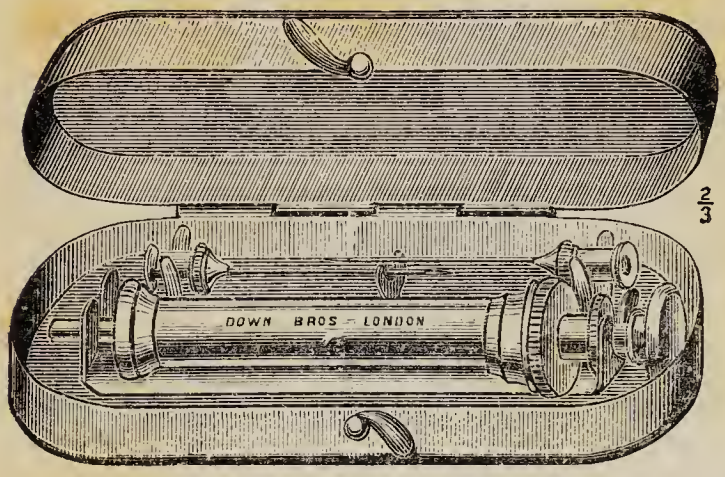
West End House—VERE ST., W. *Cod Liver Oil Factories*—LONGVA AND KJERSTAD, NORWAY
Depot for AUSTRALIA—484, COLLINS ST., MELBOURNE.
See also pages i, ii, 425, and 439.

DOWN BROS.' SPECIALITIES.

Metal Aseptic Hypodermic Syringe.



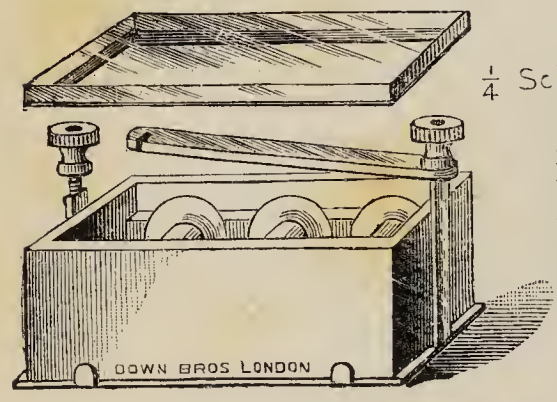
⅔ Sc

This instrument is fitted with a spring metal piston rod fitting accurately inside a metal barrel. The piston rod is a permanent and efficient one, merely requiring occasional lubricating with vaseline.

The whole instrument may be boiled and rendered perfectly aseptic without fear of injury or detaching the mounts.

Price in metal case with two steel needles, 13/6; fitted with Platinum Iridium Needles, 1/3 per needle extra.

Alcock's Portable Ligature Holder.



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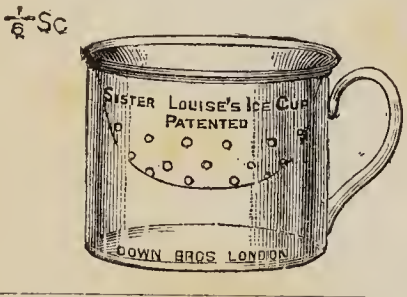
The illustration represents a new Ligature Box, which has been designed to secure the advantages of compactness and absolute water-tightness, which hitherto have not been combined in any one apparatus. The trough is made of earthenware, and fitted with three reels of the same material. The cover consists of a sheet of detachable plate glass, a narrow layer of indiarubber bordering the under surface. When the reels are in position and the trough filled with solution, the cover is clamped down by means of the screws. The ends of the ligatures can be freely drawn out between the rubber lining and the edge of the trough until the reels are completely exhausted. The apparatus will be found useful, especially for private use.

Price 12/6 each.



⅛ Sc

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PATENTED,

FOR THE WARD OR SICK ROOM.

"A very practical and most useful invention."—*Nursing Record.*

Wholesale Prices: Earthenware, 18/- per dozen.

Glass: White, Green or Azurine, each, **4/-**; Ruby, **5/6.**

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(Opposite Guy's Hospital.)

Telegraphic Address: "DOWN, LONDON."

Telephone No. 4965.

Factory: King's Head Yard, BOROUGH.

ARNOLD & SONS'
SPECIALITIES.

New Gonorrhœa Syringe (*Registered*), by Ralph Stoney, L.M.R.Q.C.P.Irel. Vide *British Medical Journal*, October 24th, 1896. Price 6s. 6d.

New Uterine Flushing Curette (*Registered*), by Archibald Donald, M.R.C.S. Eng. Vide *The Lancet*, November 7th, 1896. Price 17s. 6d.

New Portable Pocket Case, by Dr. T. H. Ward. Vide *The Lancet*, April 11th, 1896. Price, complete, 27s.

New Uterine Screw Dressing Sounds, by Mr. Hawkins-Ambler. Vide *British Medical Journal*, July 25th, 1896. Price, each, 7s. 6d.; per set of three, 21s.

Improved Mouth Gag (*Registered*) *by* W. R. Ackland, M.R.C.S. Vide *British Medical Journal*, July 25th, 1896. Price, in ebony handles, 20s. Price, in aseptic metal handles, 23s. 6d.

New Vaginal Douche Tube, by Dr. Duke. Vide *British Medical Journal*, 1894. Price, complete, 10s. 6d.

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New Intra Uterine Applicator, by H. E. Trestrail, M.R.C.S., &c. Vide *The Lancet*, November 28th, 1891. Price complete in leather case, 21s.

Immediate Perineorraphy Case, by J. B. Hellier, M.D. Vide *The Lancet*. Jan. 23rd, 1892. Price, complete in leather case, 21s.

New Stricture Dilator, by Lieut.-Colonel E. Lawrie, Hyderabad. Vide *The Lancet*, April 9th, 1892. Price £3 3s., or complete in case, £3 10s.

"Reliance" Binaural Stethoscope Patented). Vide *The Lancet*, Sept. 8th, 1894. Price 12s. 6d. In leather case, 14s.

"Reliance" Tourniquet (Patented). Vide *The Lancet*, July 15th, 1893. Price, complete in box, 2s. 6d.

Sound Post Stethoscope (*Patented*). Vide *The Lancet*, June 6th, 1896. Price 4s. 6d.

New Urethral Syringe (*Registered*), by J. MacMunn, L.R.C.S.I., &c. Vide *The Lancet*, January 18th, 1896. Price 2s. 6d.

New Exploring and Evacuating Syringes, by Dr. J. Ward Cousins. Vide *British Medical Journal*, October 10th, 1886. Price, complete in leather case, £2 15s.

New Aluminium Uterine Probe, by Dr. Duke, of Cheltenham. Vide *British Medical Journal*, August 29th, 1896. Price 6s. 6d.

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New Uterine Dilator, by C. Yelverton Pearson, M.D., &c. Vide *The Lancet*, December 17th, 1892. Price complete, 21s.; nickel plated, 22s. 6d.

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Aseptic Operation Knives (Patented), with hollow metal handles, nickel plated. (Handle and blade all one piece).

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Surgical Instrument Manufacturers by Appointment to Her Majesty's Government, the Honourable Council of India, the Admiralty, The Crown Agents for the Colonies, Her Majesty's Prisons, Foreign Governments, Royal Chelsea Hospital, St. Bartholomew's Hospital, and the Principal Provincial and Colonial Hospitals, &c., &c.,

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[ESTABLISHED 1819.

Modern Pharmaceutical Products.

'SAXIN.'

'SAXIN' has been aptly termed 'the sweetest thing on earth,' being about 600 times sweeter than sugar. It is perfectly harmless, as it undergoes no change in its passage through the digestive system, but simply imparts its delicate sweet flavour to the food or fluid with which it is used. For these reasons it is indicated in such conditions of disease as diabetes mellitus, gout, obesity, glycosuria, &c. In flavour it is more delicate than any other sweetening agent, and in the shape of 'Saxin,' ¼ gr., it provides the maximum amount of sweetening power in the smallest possible space. A small bottle, containing 100 or 200 'tabloids,' can be carried in the vest pocket without the slightest inconvenience.

'Saxin,' ¼ gr., is equivalent to one lump of best loaf sugar, and is supplied in bottles of 100 or 200 'tabloids' at **7d.** and **1s. 1d.** per bottle.

BLAUD PILL 'TABLOIDS.'

A series of sixty-five clinical trials undertaken at the National Hospital for Diseases of the Heart, Soho Square, proved that the administration of Blaud Pill 'Tabloids' caused an increase in hæmoglobin of 1·2 per cent. a day, whilst with all the other preparations used it never exceeded ½ per cent., the conditions being equal in all cases. 'Tabloids' of the following formulæ are supplied:—

Blaud Pill, 4 gr. Blaud Pill, 4 gr., with Arsenious Acid, 1-64 gr. Blaud Pill, 4 gr., with Aloin, 1-20 gr. Bottles of 25 and 100, **6d.** and **10d.** each.

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Blaud Pill Compound.—R *Pil. Ferrugin.*, *gr.* 5; *Pulv. Capsici*, *gr.* 1-4; *Aloin*; *Strychninæ*; *Acid Arseniosi*, *aa gr.* 1-30. Bottles of 100, 1s. 3d each.

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Since the favourable reports which marked the introduction of this preparation many appreciative opinions have been expressed both by physicians and the professional press.

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"AN IDEAL FORM FOR THE ADMINISTRATION OF COD LIVER OIL."—*British Medical Journal.*

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In small and large bottles, 1s. 8d. and 3s. each.

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F 23

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F 24

57th YEAR OF PUBLICATION.

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"These books were very dear to me as they stood upon my shelves. A twig from some one of my nerves (as I remember saying long ago) ran to every one of them. From the time when I first opened Bell's Anatomy to that in which I closed my Sharpey and Quain, and my 'Braithwaite's Retrospect,' they marked the progress of my studies, and stood before me as the stepping-stones of my professional life."—Dr. Oliver Wendell Holmes, *The Lancet, March 2nd*, 1889.

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INVALID BOVRIL

IS SPECIALLY PREPARED

FOR USE IN THE SICK ROOM,

and is relished and retained by Invalids when ordinary foods are rejected. It is highly concentrated and quite devoid of seasoning, put up in porcelain jars, and sold by Chemists and Druggists only.

It does not produce (as ordinary preparations do) a clear Beef Tea. A *nutritious* clear Beef Tea is an absolute impossibility.

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Braithwaite's Retrospect. July, 1897.

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THE

RETROSPECT OF MEDICINE

A Half-Yearly Journal

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

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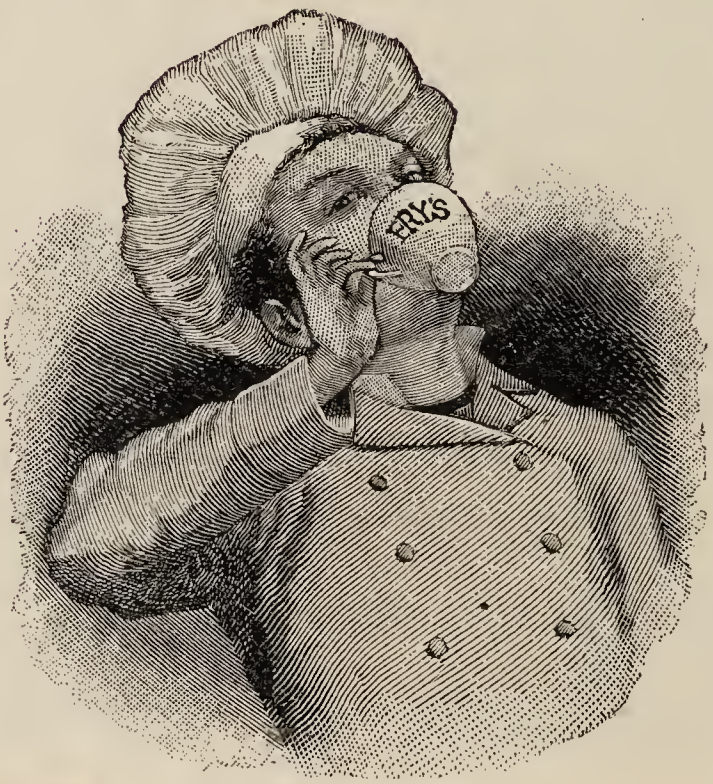

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Synopsis.

An Abstract of the most Practical Articles in this Volume, with other Short Articles from the Medical Journals, showing the most important indications of Treatment, published by different writers during the half year.

Arranged Alphabetically.

GENERAL MEDICINE AND THERAPEUTICS.

ALOES.—Poisoning with.

The *Progrès médical* for April 24 contains the following account of a curious case of poisoning which occurred at a fair in Paris:—A man was selling a yellow powder which he said had the property of causing those who took it to make faces. A number of inquisitive persons gathered around the man, who then proceeded to make experiments while advertising his wares. He threw a pinch of the powder into a glass of water and then asked some one present to drink it. A young boy stepped forward and drank the contents of the glass. He repeated the experiment twice without expressing the least repugnance in his face, but suddenly, almost before the third glass was emptied, he was seen to stagger and throw himself on the ground in great pain. The people gathered around the boy, and the man, seizing the opportunity to make his escape, ran away, leaving his basket of wares behind him. The boy was taken to a hospital, where, owing to prompt and unsparing attention, the physicians hoped to save his life. The basket was seized and taken to the municipal laboratory for analysis of the contents. On the same day the police arrested another man who was selling a brown powder which he said was pulverised aloes. (New York Medical Journal, May 15, 1897.)

ANALGEN IN INFANTILE THERAPEUTICS.

(By M. Moncorvo, *Bull. de l'Acad. de Méd.*, November 10, 1896.) M. Moncorvo reports on the use of this new aromatic remedy in children. He has given it in thirty-three cases of malarial fever. The ages of the children varied from twenty days to thirteen years. Being soluble in an acid medium, the drug was readily absorbed by the stomach, and its tastelessness rendered

it easy of administration. The dose employed was from 25 cgr. to 1 grm. in the twenty-four hours. The remedy succeeded more or less completely, the temperature was promptly lowered, the skin acted freely, and the patient was rendered quieter without any troublesome nervous depression supervening. The attacks were cut short in a large proportion of the cases. On increasing the dose the urine was sometimes diminished in quantity, and at the same time presented a reddish colour, but chemical examination revealed no trace of albumen or sugar. A prolonged use of the drug produced no troublesome symptoms nor any cutaneous eruption. These cases appear to prove that in analgen we possess a useful adjuvant of or even substitute for quinine in cases in which that drug cannot be administered. The author reports the effects of the treatment in twenty-six mixed cases, as follows :—In acute or subacute tuberculosis (seven cases) it is of incontestable utility, reducing temperature and relieving cough, and producing a feeling of *bien-être ;* in acute lymphangitis (five cases) it is an efficient antipyretic and analgesic ; in hysteria (two cases) it relieved nervous excitement and respiratory and cardiac arhythmia ; a little girl of nine years was promptly cured of chorea by a dose increased from 1 to 3 grms. in the twenty-four hours ; the crises of partial epilepsy were relieved (one case) ; it is also of more or less utility in assuaging the pain of Pott's disease, hip disease, &c. The drug was always well tolerated, and produced neither weakness, rash, albuminuria, nor glycosuria. (Dr. W. T. C. Cocking's abstract in the Quarterly Medical Journal, January, 1897.)

ANTIPYRIN.

M. Lyon, in speaking on the above subject, said that within these last few years a certain number of examples of accidents attributed to the use of antipyrin have been reported. The cutaneous manifestations so frequently observed were in general those of erythema of a scarlatinous nature, or spots giving the aspect of measles. He thought it interesting to report a case wherein the exanthema was coustituted by an eruption of pemphigous nature. It was that of a woman who, after taking twenty grains of antipyrin for a violent headache, presented on different points of the body, bullæ, more or less voluminous, while deglutition became difficult, and an abundant salivation was provoked. It was the second time that this patient presented such symptoms from the same cause. Examination of the urine showed that albumen was present, which probably accounted for the toxic effects of the antipyrin. A member said that antipyrin in solution produced accidents less frequently than when given in wafers and that the individual susceptibility

was a considerable factor in the production of these phenomena. He knew of the case of a young girl in whom antipyrin even in small doses caused faintings, sickness, general malaise, and sometimes convulsions. The urine never contained any albumen. (Medical Press and Circular, March 24, 1897.)

BERI-BERI.—Treatment of.

Dr. M. H. Spencer analyses the cases occurring in the Seamen's Hospital, Greenwich, and makes the following remarks on treatment :—Patients suffering from beri-beri should as soon as possible be removed from the infected area. They should be kept carefully at rest in bed in well-ventilated rooms, which should be raised above the ground. Great care should be exercised in moving severe cases, for, as in scurvy, sudden heart failure is liable to occur. Treatment should be directed firstly towards strengthening the heart's action and towards the relief of the overloaded pulmonary system. For this purpose a mixture containing sulphate of magnesia, digitalis, and nux vomica seems to be useful. The sulphate of magnesia should be present in sufficient doses to secure free action of the bowels. In the meantime, the patient's strength should be supported with suitable diet. Wheat, barley, or beans should be substituted for rice, and some animal food should be taken. Stimulants are best kept in reserve for attacks of syncope. If the right side of the heart is much dilated, as evidenced by pulsation of vessels in the neck, dyspnœa with cyanosis, increased area of the heart's dulness to the right, and reduplicated second sound, free purgation should be employed. Nitro-glycerine may also prove useful in such cases, but if relief does not follow these measures it is best to bleed the patient from the arm without delay. When the affection has reached a chronic stage, with wasting muscles, well applied massage and faradaism may do much to hasten recovery. During convalescence iron and arsenic may be given with advantage. (Lancet, January 2, 1897.)

BICYCLING BY CHILDREN.

Privat. docent Dr. Martin Mendelsohn (*Der Kinderarzt*, 1896, vii., 8) has the following to say in reference to bicycle riding in childhood :—A large amount of cycling in childhood is to be greatly curtailed, and in many cases ought to be altogether prohibited. The introduction of wheeling is not to be recommended in the physical education of children. The effect on the heart of the child is even more injurious than on that of the adult, for children have a tendency to assume an incorrect position on the wheel, and to bend the body forward too much. The continued pressure of the saddle also has a bad influence on the undeveloped generative organs. The bony skeleton is still

soft, and tends to deformities. Bicycling should be absolutely forbidden in convalescence from fevers. Frequently myocarditis (intermittent pulse) is produced by it after infectious diseases. Great care should be taken not to overburden the heart by exercise on the wheel, otherwise permanent changes in the heart-muscle may take place. A child passed through scarlet fever and measles without any injury to the heart. Later it passed through an attack of varicella, and soon after convalescence took to cycling, which caused irregularity of the heart's action, a weak, rapid pulse, and other symptoms of cardiac weakness, which later on led to an aortic insufficiency. Even without antecedent disease care is necessary. In childhood the blood pressure is often physiologically raised, particularly as the child is nearing puberty. (Pediatrics, 1897, p. 96.)

CAMPHORIC ACID IN EXCESSIVE SWEATING.

(By Dr. R. Stockman, *Ed. Med. Jour.*, January, 1897.) Camphoric acid (C_{10} H_{16} O_4) occurs in white needle-shaped crystals. It has no smell, but a somewhat bitter taste. It is formed by oxidising common camphor with nitric acid. Its alkaline salts, such as the camphorate of soda, are readily soluble. The author has used the drug for the last four years in a large number of cases, tubercular and non-tubercular, with satisfactory results. In phthisical sweating it is as efficient as atropine, but it is, perhaps, not so powerful an anhidrotic as picrotoxin. It is useful, however, both on its own account and as a change from one or other of these. Thirty grains are given in powder, capsule or cachet at night. Owing to its insolubility, it is only slowly absorbed from the intestines, and should therefore be given about two or three hours before the sweating is expected. The only unpleasant effect observed by the author has been slight irritation of the stomach. It seems to be non-poisonous, even in large doses, and in this respect has distinctly an advantage over belladonna, picrotoxin, and agaricin. Experiments on sweat secretion in cats show conclusively that camphoric acid acts as an anhidrotic by paralysing the secretory nerves of the sweat glands. (Quarterly Medical Journal, April, 1897.)

CHLOROSIS.—Treatment by Oxygen.

Dr. J. L. Corish (*New York Medical Journal*, February 13, 1897) considers that chlorosis is a disturbance of the normal ratio which oxygen and iron bear to the other chemical constituents of the red blood corpuscles, these elements being diminished in amount. The blood of the chlorotic subject shows a diminution in the amount of hæmoglobin contained in the red blood corpuscles, also a diminution in the ratio which the white blood corpuscles bear to the red, so that there is a loss not only in

quality but also in quantity. These conditions may be brought about—(1) By the withdrawal of food containing iron (digestive disturbance and starvation); (2) rapid growth of the body, with rapid full development of the organs (puberty); (3) interference with the proper absorption by the blood of oxygen through disturbance of the respiration; (4) foreign substances in the air; (5) wasting diseases. These conditions lead to the diminution of the number of red blood corpuscles, and the ratio of oxygen and iron in the corpuscles becomes less. Iron taken in the food or as a medicament is partly converted into albuminate. But a corpuscle can only absorb iron in the form of an oxide. When a corpuscle relatively poor in oxygen meets iron in the form of albuminate it can only take up the iron in proportion to the amount of loose oxygen which the corpuscle contains. If the pressure of air in the lungs is increased half an atmosphere, the corpuscle will take up fifty per cent. more oxygen than under normal atmospheric pressure. Thus the amount of oxygen conveyed to the tissues would be more than sufficient for their immediate needs, leaving a percentage of loose oxygen in the corpuscle which will enable it to replace the iron lost. The corpuscle then becomes fitted to absorb more oxygen the next time it returns to the lung, and finally is able to take up iron for itself without the assistance of extra pressure for storing up loose oxygen. For some years Dr. Corish had used iron in one form or another in every case of chlorosis. In about fifty per cent. a decided improvement resulted. In other cases the improvement was only temporary, and sometimes the iron treatment seemed to work positive injury. He came to the conclusion that the cause could not be lack of iron in the blood *per se*, but the inability of the blood to absorb the iron presented. The amount of iron needed by the blood is really very small, and is readily contained in the normal amount of food ingested. Oxygen inhalations under pressure supply the blood with sufficient loose oxygen to take up the iron presented to it. The author describes three cases in which beneficial results were obtained after iron alone had proved ineffectual. Dr. Corish does not recommend iron in all cases. When nervous excitement or digestive disturbances are present iron only aggravates the trouble. He thinks arsenic can advantageously replace iron. Arsenic and oxygen have effected cures in many cases in his practice which had resisted iron. He considers oxygen to be the one element necessary to place the chlorotic on a firm foundation for subsequent improvement. Iron, arsenic, &c., are secondary, and should be administered sparingly. Dr. Corish thinks there has been a dread of doing injury by giving too much oxygen, but believes there is no fear of giving too much. The oxygen should be diluted with nitrogen for the purposes of inhalation. (Abstract in Medical Chronicle, March, 1897.)

CONDURANGO.

Dr. G. Bardet believes that there is no doubt this is a drug, calming in its action, which diminishes the reflexes and antagonizes exaggerated motility. This is especially noticeable in gastric pain, and, in addition, it improves the digestion of persons suffering from lesions of the stomach. According to Tcheisow, it stimulates the pancreatic and biliary functions, and this supplements its action upon gastric digestion. It does not, however, produce a specific effect in gastric cancer, but only acts as above noted. The dose of the 20 per cent. tincture is from two to four teaspoonfuls and of the extract seven to fifteen grains. In prescribing this drug it is well to specify the bark of the white condurango, which is the only species as yet studied.—*Les Nouveaux Remèdes*, 1897, No. 3, p. 65. (American Journal of Medical Science, May, 1897.)

DIABETES MELLITUS.

Loeb (*Centralb. f. inn. Med.*, February 6, 1897) records another case illustrating the very early stages of diabetes, in which there is a small quantity of sugar in the urine, but as yet none of the symptoms of diabetes. A man, aged 53, came complaining of anosmia. Examination of the nose gave negative results. The urine, specific gravity 1018, contained, however, 0·25 per cent. sugar. There was no thirst or sense of weariness, and the patient was well nourished. Some 23 months later the patient was still able to do a full day's work. His weight was the same as before, but he looked as if he had become more corpulent. The only symptom complained of was cramps in the calves of the legs. When questioned he was found to drink more fluid and to pass more urine than formerly. The urine now contained 3·5 per cent. sugar. Thus this patient had passed small quantities of sugar in the urine for some time before symptoms of diabetes appeared. Unschuld laid stress upon cramp as being an early symptom of diabetes. A very small percentage of sugar in the urine does not suffice to establish the diagnosis of diabetes, and even years may pass before the disease can definitely be proved to exist. (British Medical Journal Epitome, March 20, 1897.)

DIPHTHERIA AND PSEUDO-DIPHTHERIA BACILLUS.

The object of Dr. E. A. Peters' paper (*Journal of Pathology and Bacteriology*, December, 1896), which is based on the examination of 137 cases, is to show that two varieties of the diphtheria bacillus exist, and that these two varieties never pass the one into the other, even when cultivated for two years, so that they can always be readily distinguished by the microscope, if

compared under the same conditions. The long form, which corresponds to the typical Klebs-Löffler bacillus, was found in all the typical cases of diphtheria examined, and also in some cases the nature of which was not so clear. The short form, which occurred in cases of diphtheria of a mild type, was seldom met with. Its mode of growth was almost identical with the preceding variety. Both varieties were fatal to guinea-pigs when 1 cc. of a forty hours' broth cultivation was injected subcutaneously, but the short form readily lost its virulence and became smaller, and then somewhat resembled the pseudo diphtheria bacillus of von Hofmann. This latter organism was never met with in normal throats, but occurred in various catarrhal conditions, and frequently in cases of diphtheria, associated with typical diphtheria bacilli, though it does not follow the long Klebs-Löffler bacillus by rote. Its growth in gelatine broth never showed the clear acidity characteristic of the diphtheria bacillus. Guinea-pigs, inoculated with 1 cc. of a forty hours' broth cultivation, were never killed, nor was œdema marked in any case. The bacillus was cultivated for two years, and showed very little alteration in its morphological character. A long non-pathogenic bacillus, closely resembling the long Klebs-Löffler bacillus, was obtained from a case of chronic faucial catarrh. (Medical Chronicle, January, 1897.)

DIPHTHERIA SERUM.

Dr. Haase, of Strasburg, in the *Aerztliche Rundschau*, October, reports his experience with the curative serum of diphtheria in an unbroken series of 291 cases. He had ten deaths, all advanced cases when first seen by him, or less than 4 per cent. "The inoculations included one of 3,000 units of immunisation *pro dosi*, and another successful case was that of a child only two days old, into which I injected 1,000 units of immunisation. In the latter case it is possible that either I or the nurse communicated the disease, but in spite of a very high fever and violent symptoms of stenosis at first, within twenty-four hours the well-known shrivelling of the diphtheritic membrane on the ulterior pharyngeal wall and the tonsils commenced. The child was completely cured within six days. The injection was unaccompanied by any bye-effects. The child exhibits constant increase in weight and is in good health. For the information of opponents to the serum therapy, I would mention that in all doubtful cases diphtheritic investigation was undertaken, and on each occasion the presence of true diphtheria bacteria was demonstrated. The extremely favourable results which I have obtained undoubtedly do not depend entirely upon the use of serum, but concomitant circumstances have contributed thereto. For instance, a large majority of the cases were

tonsillar diphtheria, and in consequence of the instructions given to the sisters and nurses it was nearly always possible to carry out injections in the first stages of the diphtheritic attack." (Journal of the American Medical Association, January 23, 1897.)

DIPHTHERIA.—Preventive Inoculation against.

Kármán (*Pester Med.-Chir. Presse*, October 18, 1896) was entrusted by the Hungarian Government with the task of instituting measures for preventing the spread of diphtheria in a village and its neighbourhood. As general hygienic regulations accomplished nothing, he tried preventive inoculation with concentrated Preirz's serum—1 c.cm. for children less than 1 year old, 2 c.cm. for those between 1 and 3, and 3 c.cm. for those above 3. Among 114 children thus treated there was during the next two months no case of diphtheria, although the disease was prevalent in the village up to the date at which inoculation commenced, and continued to rage in the surrounding villages afterwards. During those two months only one case of diphtheria appeared in the village under consideration, and this was in an uninoculated child, while in the previous five months 18·3 per cent. of the village children had been attacked, of whom eight died, six not having been treated with serum. Considering the wretched hygienic condition of the village, the harmlessness of preventive inoculations, and the continuance of the disease in the neighbouring villages, where diphtheria vaccination was not carried out, the extraordinary value of the inoculations in the prophylaxis of diphtheria can hardly be denied. (British Medical Journal Epitome, January 16, 1897.)

Diphtheria.—Relapse in.

Relapse is more common in children than in older patients, and this, no doubt, is simply the expression of their greater susceptibility to diphtheria. It shows no predilection for either sex. The fauces and tonsils are the parts most commonly affected, and the disease but rarely spreads to the nares or larynx if the patient is promptly brought under treatment. The relapse in diphtheria, like that in enteric, is usually milder and less prolonged than the primary attack. It may occur at any time during later convalescence, but very rarely before the expiration of a fortnight from the time when the previous exudation disappeared. Relapse is somewhat more common in cases treated with antitoxin than in those treated by former methods; the proportionate incidence of relapse amongst 3,529 cases completed in the Metropolitan Asylums Board Hospitals during the course of last year, the antitoxin year, being 1·4 per cent.; whereas in 1894, the year immediately preceding the use

of antitoxin, the incidence amongst 3,042 cases was ·9 per cent. This slight increase in the percentage of relapses is no argument against the use of antitoxin ; it simply means that another dose or two was required to complete the protection, which in the case of diphtheria does not seem, as a rule, to be of long duration. It is, I think, no more surprising that the antitoxic treatment should have the effect of somewhat increasing the tendency to relapse in diphtheria than that the cold bath, or any other form of abortive or repressive treatment, should conduce to the same result in enteric. It would seem, then, that the occurrence of relapse in diphtheria is frequently, if not invariably, dependent upon the operation of some extrinsic cause, which is capable of so modifying the activity of the bacilli which still linger in the fauces as to bring about a re-formation of membrane and a fresh manufacture of the specific poison. (From Dr. Foord Caiger's paper in St. Thomas's Hospital Reports, vol. xxiv. 1897.)

Diphtheria.—Serum Treatment of.

Eadie and McMahon (*Canadian Pract.*, 1896, xxi., 794), report thirty-two cases ; Watson, seven cases ; and Hunter reports one case. In eighteen of Eadie and McMahon's cases absolutely no other treatment was used than a single injection of the serum. All the cases recovered. One was a case of laryngeal diphtheria, and was characterised by alarming stenosis, which was partly relieved within two or three hours after using the serum ; this patient was quite safe in two days. In another the nostrils were almost plugged with membrane and the foul smell had already appeared, but in forty-eight hours the membrane was separating and the child almost well. In no case did marked improvement fail to appear within forty-eight hours, and, on visiting our patients the second day after the injections, it was a common experience to find them singing and calling for a substantial meal. The temperature sometimes dropped to normal in twenty-four hours, and nearly always within forty-eight hours. In many cases the swelling of the throat subsided and the membrane began to disappear within twenty-four hours ; but usually the membrane did not disappear until from forty-eight to seventy-two hours. The results were better when the cases were treated early. Thus in one case, a boy, aged eight, which was seen within a few hours after inception, 1,000 antitoxic units were injected at midnight, and thirteen hours later the membrane had almost entirely disappeared. In two of the cases—the laryngeal and nasal—we should have looked for a probable fatal termination under the old expectant plan of treatment, and it was gratifying to find both out of danger within forty-eight hours. Twelve of the other cases were of the severe pharyngeal type, and

would, in our experience, have lasted from one to two weeks under the old treatment. In fact, we feel justified in saying that even the most virulent cases yielded to treatment sooner than the mildest had done, in our experience, under the old methods. In only one case did the membrane fail to disappear before the fourth day. Dr. A. D. Watson reports that he has treated seven cases with the serum within the past few months, and that all recovered promptly, although in two cases the larnyx was involved. Dr. Hunter also reports a case. Here, then, are, including Dr. Watson's and Dr. Hunter's cases, forty cases of diphtheria, including four laryngeal and one nasal, not only without a death, but followed by recovery so prompt that no reasonable man can attribute it to anything but the antitoxin. (Pediatrics, April 15, 1897.)

Diphtheria.—Serum Treatment of.

The American Pediatric Society's supplementary report on the use of antitoxin in laryngeal diphtheria, to be found in the columns of this issue of the *Medical Record*, is worthy of close study. Laryngeal diphtheria requiring operative interference furnishes the best test of the methods of treatment. There is entire harmony of opinion as to its severity, and its statistics before and after the advent of the antitoxin are more reliable than those of most other well-observed diseases. The report contains an analysis of 668 cases operated upon, with a mortality of 27·24 per cent. As the report mentions, early statistics of intubation, in pre-antitoxin days, could show only 27 per cent. recovery. Other factors remaining constant, the use of antitoxin has carried the percentage from 27 per cent. recovery up over the divide till it now reads 27 per cent. mortality. The next point of importance is the percentage of cases escaping operation under antitoxin treatment. It was formerly believed that 90 per cent. of laryngeal cases required operation ; now, with the use of antitoxin, 39 per cent. require it. The returns from physicians show, for the most part, an earlier use of antitoxin in diphtheria treatment and an increasing confidence. There exists, however, a certain amount of timidity. Doses from one-tenth to one-fourth the amount required have been administered, in some cases 200, 400, and 500 antitoxin units being used, whereas the dose required is from 2,000 to 2,500. It is believed that the percentage of mortality will gradually decrease. This decrease will depend upon three factors:—First, a better quality of strong antitoxin will be found in the market ; second, the serum will be administered earlier ; third, appropriate doses (2,000 units in laryngeal cases) will be employed. (From a leader in the Medical Record, May 15, 1897.)

Diphtheria.—Serum Treatment of.

A second report has just been issued on the use of antitoxic serum in the treatment of diphtheria by the medical superintendents of the hospitals of the Metropolitan Asylums Board. The cases included deal with the year 1896, and it may be broadly stated that it shows that the favourable results met with during the preceding year have been fully maintained. The report is divided into two sections, the first dealing with primary diphtheria, the second with post-scarlatinal diphtheria, and an appendix is added in which various tables dealing with the statistics of the different hospitals are given. *Conclusions.*—The conclusions as to the effects of the treatment are as follows:—(1) A great reduction in the mortality of cases brought under treatment on the first three days of illness. (2) The lowering of the combined general mortality to a point below that of any former year. (3) The still more remarkable reduction in the mortality of the laryngeal cases. (4) The uniform improvement in the results of tracheotomy at each separate hospital. (5) The beneficial effect produced on the clinical course of the disease. (British Medical Journal, May 29, 1897.)

EUQUININE.

Professor Carl von Noorden, of Frankfort-on-the-Main, has an article on euquinine in the *Centralblatt für innere Medicin* for November 28. He describes it as the ethylcarbonic-acid ester of quinine. It occurs in white needles which are soluble with difficulty in water, but readily soluble in alcohol, in ether, and in chloroform. It has an alkaline reaction and forms crystalline salts with acids. The chloride is readily soluble in water, the sulphate dissolves with some difficulty, and the tannate is almost insoluble. The alkaloid itself, which is the form in which von Noorden has used euquinine most largely, is entirely tasteless at first, but has a slightly bitter after-taste, reminding one of the taste of a very weak solution of quinine. If it is taken in sherry, milk, soup, cocoa, or the like, no unpleasant taste is perceived. Healthy persons can take 15 grains, and in most instances twice that amount, daily without experiencing any unpleasant feeling in the head. Even after a prolonged use of these doses there were no disturbances attributable to them in any of his patients. Euquinine is said to be a derivative of quinine, of which it has the characteristic remedial virtues without any of the unpleasant properties of that drug. This is implied in its name. It may be used in all cases in which quinine is indicated, but for any reason is objectionable. (New York Medical Journal, January 2, 1897.

EXANTHEMATA, PRODROMAL and SECONDARY.

Bernhard (*Müinchener med. Wochenschrift*, 1896, No. 34) calls attention to the importance of the prodromal and secondary rashes in various diseases. The prodromal rashes are most frequent in measles and rubella, but occur also in diphtheria, pneumonia, scarlatina, varicella, and pertussis. They have no peculiar character in the various diseases, polymorphous rashes being the rule. Diffuse erythema or macules of various sizes and various degrees of redness occur. Usually the rash does not last more than three days. The face is not affected. Sometimes the rash fades if the patient is kept exposed for some time. Conjunctivitis is not present, but photophobia may be in the early stages of measles. Pharyngitis is frequent. There is little or no fever, but apathy, anorexia, indisposition, or malaise may be observed. The secondary rashes, according to the author, occur in three forms. The first appears from the tenth to the twenty-first day in those who have had rhinitis, rhagades on the lips, aphthous ulcers, necrotic anginas, exanthemata or pneumonia. There are red spots the size of lentils on the body and extremities. The face is but slightly affected. The macules become larger, confluent, pale in the centres, with elevation of the margin. The temperature at such times tends to fall. The diazo-reaction may be present. Bernhard thinks this rash is like that described by Raudnitz as *erythema exudativum multiforme septicum*, which Martineau saw follow vaccination. The second form, which occurs in the same kind of cases, has often been observed in secondary streptococcus infections. About the end of the second or beginning of the third week lentil-sized macules occur over the joints, especially the knees, and spread centripetally. An epidemic occurrence may be observed, as Hutinel claimed, so that isolation should be practised. The third form of the rash occurs as a scarlatiniform redness. It appears earlier than the others, and, in contrast to them, may be accompanied by a rise of temperature. Streptococci are concerned in some but not all of these cases, in which Bernhard thinks the primary virus may sometimes cause the secondary rash. In one of his cases diphtheria-bacilli were present. (American Journal of Medical Science, November, 1896.)

FONTANELLE, CLINICAL SIGNIFICANCE OF THE.

Dr. Abt (*Medicine*, vol. ii., No. 11) concludes his paper on the above subject as follows:—(1) Involution of the fontanelle occurs normally from the fifteenth to the eighteenth month. From birth to the ninth month the fontanelle decreases gradually

in area, and from this time till complete closure the decrease is more rapid. Retardation of normal involution indicates rachitis or hydrocephalus. (2) The fontanelle presents pulsatory and respiratory phenomena. The pulsation increases if the tension is slightly increased; diminishes or is lost if the tension be greatly increased. (3) A murmur over the fontanelle occurs in a certain number of children, most commonly in those who are anæmic or rachitic. It is not pathognomonic. (4) A slightly prominent and pulsating fontanelle indicates a cerebral hyperæmia, such as occurs in fevers. (5) A protuberant and tense fontanelle indicates an exudation or inflammation in the cranial cavity. (6) Retracted fontanelle indicates a condition of collapse, brought about by acute intestinal disease with profuse watery discharges, infantile atrophy from any cause, hemorrhage, effects of prolonged acute infectious disease, or marantic sinus thrombosis. (7) In acute infectious diseases with meningeal symptoms, examination of the fontanelle shows no protuberance or tension, whereas in true meningitis these conditions are marked. (8) In the so-called hydrocephaloid, a terminal condition of cholera infantum marked by the occurrence of striking meningeal symptoms, the fontanelle is retracted. (Medical Record, February 6, 1897.)

GLANDULAR FEVER, EPIDEMIC OF.

Dr. J. P. West read a paper before the New York Academy of Medicine upon an epidemic which had occurred in his vicinity. Altogether, 96 cases had occurred in 43 different families. None of the cases had developed during the summer months. The youngest child who contracted the disease was seven months old, and the oldest thirteen years. The disease usually lasted a little over two weeks, but the active symptoms subsided for the most part after the first week. As the illness commonly terminated by a critical discharge, calomel was given in a few instances with the hope of hastening the crisis. This, however, proved a disappointment, for not only was the crisis not hastened, but the calomel produced marked prostration. In 87 of the cases the liver was enlarged, and in 53 there was enlargement of the spleen. The older children complained of choking sensations. The glandular swelling appeared smooth on inspection, but palpation would reveal the individual glands. As a rule, the enlargement began on the left side, and subsequently involved the right side. The period of incubation was apparently about a week. During this epidemic no cases of mumps occurred, and 57 of the children had mumps either previously or subsequent to the epidemic of glandular fever. Apparently the source of the poison in glandular fever was not always the same. (Medical News, November 28, 1896.)

GOUT.—Local Treatment of.

Dr. William Murrell, in *The Lancet*, gives the following method, which he has employed with success:—I take half-an-ounce of iodide of potassium, dissolve it in half-a-pint of rectified spirit—methylated spirit is used in hospital practice—add one ounce of soap liniment, and then one-half drachm each of oil of cajeput and oil of cloves. A piece of lint is soaked in this mixture, wrapped round the affected part, covered with a protective, and kept in place by a bandage. It acts as a powerful counter-irritant, and the inflammation usually subsides in from twelve to twenty-four hours. In addition, I not uncommonly give a drachm of colchicum wine with ten grains of iodide of potassium three times a day. These large doses of colchicum wine induce brisk purgation, sometimes accompanied by vomiting, but they speedily cut short the attack. This mode of treatment is especially useful in the case of robust, full-bodied men in active employment, to whom the loss of a day's work is a serious consideration. In sciatica, lumbago, and rheumatism affecting one joint the local application of a liniment containing half-an-ounce of salicylate of sodium, half-a-drachm of oil of cajeput, fifteen minims of oil of eucalyptus, and half-an-ounce of soap liniment in six ounces of rectified spirit affords prompt relief. (Medical Times and Hospital Gazette, November 7, 1896.)

GOUT, CHRONIC.—Meat Diet in Certain Forms of.

Mr. William Armstrong (Buxton) said that during the last few years he had given a trial in various cases of gouty arthritis and recurrent renal calculi to a method of treatment based on the prolonged administration of nothing but red meat and hot water, and very marked improvement had resulted, which had persisted in spite of gradual return to an ordinary dietary. His plan was to give the patient a daily allowance of from 1 lb. to 4 lbs of lean beefsteak, minced and cooked in various ways, the patient drinking from 2 to 5 pints of hot water, and avoiding all starchy, saccharine, and fermentative articles of food. The effects which he had obtained were rapid diminution of abdominal girth, loss of fat and flabby tissue, increase in the quantity, and ultimate disappearance, of urates, alkaloids, and toxins from the urine. The joint swelling greatly diminished, the aching and pain were much diminished, and their mobility considerably increased. The capacity for work, mental and bodily, was enhanced, and the symptoms of maldigestion and disassimilation disappeared. This treatment was indicated (1) in obstinate chronic gouty arthritis, (2) in recurrent uric acid calculi, (3) in frequent and intractable migraine, (4) in cases of persistent gouty dyspepsia. It was specially useful

when there were symptoms of amylaceous and intestinal dyspepsia, of excessive formation of sulphuretted hydrogen, urates, indican, skatol, cresol, and other toxins. Under this treatment digestion was more complete and the processes of fermentation and putrefaction were kept within narrower limits, oxidation being more perfect and less waste being consequently left in the system. Whatever poisonous matters remained in the system were readily eliminated by the taking of the hot water, which also flushed the stomach, liver, and kidneys. He admitted that the treatment was irksome and trying, and must of necessity be carried out with great strictness, therefore its use should be restricted to the more difficult cases. It should be prescribed but rarely, and then only under the most careful supervision in cases in which the heart or kidneys were diseased. Used with due care, he considered it a most efficient and even brilliant addition to the therapeutic measures. (From report of the London Medical Society, British Medical Journal, May 1, 1897.)

GRAVES'S DISEASE.

Debove reported a fatal case of thyroidectomy performed in Graves's disease. The operation was without any complication whatever. Only the right lobe of the gland was removed. For several hours the patient presented no unusual symptoms. About six o'clock on the day of operation there was slight dyspnœa, which rapidly became worse, and was followed by agitation, delirium, and coma, death occurring the same night. Nothing was found at autopsy to explain this sudden death.

Marie thought that a distinction should be made in exophthalmic goitre between those cases which begin with tachycardia and develope afterward the thyroid enlargement and those cases in which the goitre precedes the palpitation by possibly fifteen or twenty years. His study of statistics (which, unfortunately, are often incomplete on this point) has led him to believe that most of the fatal operative cases belong in the former class, and most of the recoveries in the latter. The results of treatment by thyroid extracts correspond in this respect to the results of operation, for this treatment is useless or injurious in the true exophthalmic goitre, but is beneficial in those cases of goitre which have taken on symptoms of the exophthalmic type. (Medical News, February 13, 1897.)

Graves's Disease.—Early Symptoms of.

It is important to be able to distinguish this disease from the first, instead of waiting for the exophthalmos and goitre to

appear. Principal among the early signs by which it may be recognised is a series of ocular troubles, a lack of synergic action in the lid and brow when the globe is turned abruptly upward, incomplete closure of the palpebral fissure, pulsation in the lids, muscular paralyses, and sometimes diplopia or photophobia. There are also disturbances in the nervous system, besides a general irritability; there are often cramps, neuralgias, hyperæsthesias, insomnia, choreic movements, and sensations of excessive heat. The tremor, which is rarely absent from the first, has a specific character in its rapid vibrations. If there are no accompanying symptoms of hysteria, this tremor is of great diagnostic value. The general symptoms that may occur are numerous and various, from dyspepsia, bulimia, gastric and diarrhœic crises, to genital troubles, and œdema resembling myxœdema. Other disturbances indicate the participation of the medulla oblongata suffering from lack of the normal secretions of the thyroid gland, polyuria, albuminuria, and dyspnœa. Pregnancy is one of the most important predisposing causes of this disease, and it may also appear as a complication of neurasthenia, chorea, epilepsy, paralysis agitans, syringomyelia, general paralysis, and various psychoses, especially tabes and hysteria. —*Revue de Medecine et de Chirurgie*, (Medical Record, December 12, 1896.)

Graves's Disease.—Œdema in.

My experience of œdema in Graves's disease may be summarised as follows:—(1) A slight œdema limited to the legs is not an infrequent accompaniment of the disease. This results from cardiac weakness, and is best met by the administration of cardiac tonics. (2) A general œdema may be one of the main features of the early stage of the disease, and is not necessarily an unfavourable sign. (3) General œdema may supervene before death. (4) Local œdema may affect the eyelids. Either the upper eyelids or the lower may be the seat of swelling, or both may be affected. (5) Swelling of the eyelids may be an early symptom, or it may come on after some years. (6) Such swelling is sometimes very persistent, and may remain after all the other symptoms have disappeared. (7) Sometimes a non-pitting swelling is met with, affecting the lower extremities, resembling the swelling of myxœdema. This swelling is, however, unaffected by thyroid treatment. I may also again allude to a similar swelling affecting the abdominal wall observed by Basedow. (8) Of the fugitive transitory swellings, described by Maude, I have had no personal experience. (From Dr. Hector Mackenzie's paper in the Edinburgh Medical Journal, April, 1897.)

GUAIACOL IN PYREXIA.

Dr. Drury read a paper on the above before the Royal Academy of Medicine in Ireland. He drew attention to the uses and modes of use of guaiacol, but selected the method of epidermic application recommended by Rondet in 1895, as a means of reducing temperature, as superior to either internal administration, or by hypodermic injection. By this method, 1 to 10 minims are rubbed into the skin, previously washed, and the part covered with oiled silk. About 50 cases had been so treated. The conclusions arrived at were :—(1) As a rule, no ill effects follow its use. In one case of enteric fever in a female, after the use of m. x. on five successive evenings, collapse occurred several hours after the fifth application ; the collapse was recovered from. (2) It very rarely fails to cause a fall of temperature, the fall being greater when the temperature is high than when it is only moderate in degree. (3) The fall reaches its maximum generally about one hour after administration, and is maintained for several hours. (4) After its use the skin becomes moist, and the patient generally sleeps. (5) It does not seem to have any effect on the course of the disease which is the cause of the fever. (6) It seems to act on pyrexia, no matter what the disease may be which causes it. (7) It usually increases secretion of urine, diminishes the night sweats of phthisis, and often relieves the cough. (8) Cardiac failure appears to be the only contra-indication to its use. (Dublin Journal of Medical Science, February, 1897.)

HICCOUGH CURED BY TRACTION OF THE TONGUE.

Professor Lepine of Lyons stated that he had arrested and cured a case of hiccough of four days' standing by drawing the tongue out and keeping it outside of the mouth for a few minutes. He does not know whether the procedure is of any practical utility in such cases, but theoretically it is of interest. It may be asked if rhythmic tractions of the tongue excite the respiratory center, as they do in restoring respiration in cases of asphyxia, how can they inhibit this center, as in the case observed ? This apparent contradiction is explained by some experiments made by Professor Lepine in 1876, showing that the result of excitation depends, in the greatest part, on the state of the nervous apparatus concerned ; so that, while excitation of the nerves at the base of the tongue will excite the respiratory center when this is paralysed, similar excitation will depress it if it is in a state of exaggerated excitability.—*Universal Medical Journal.* (Journal of the American Medical Association, January 9, 1897.)

LINEN.—Disinfection of Soiled.

Beyer (*Fortschr. de Medicin*, No. 1, 1897) has tested different methods employed for the disinfection of bed linen and underclothing. The ordinary methods by boiling are not suited to these articles, as the presence of blood, pus, and fæces causes an ineradicable stain if a high temperature is used. Soaking the garments in solutions of various soaps for one or two days failed in every instance to kill cholera, typhoid, and pyogenic organisms which were mixed with the fæces with which the garments were smeared. In some cases the germs were killed when the solutions containing the linen were kept at 50° C. for a few hours. With lime-water the results were much better. Sample garments which were soaked in this solution for twenty-four hours were found to be sterilised. An equally good result was obtained in a hospital where about one-half a cubic meter of soiled linen was soaked in lime-water for forty-eight hours—or for twenty-four hours if the clothing was first rinsed with lime-water and then placed in a fresh solution. The lime-water does not injure linen or cotton goods, but shrinks woollen to such an extent as to prevent its use. (Medical News, May 1, 1897.)

MEASLES AND WHOOPING COUGH.

In the May number of the *Revue mensuelle des maladies de l'enfance*, M. Marcel Labbé has a long article on the association of measles and whooping cough in infantile pathology. The influence which these two diseases exercise one upon the other is marked by differences according to the time of their appearance. When they occur simultaneously they hardly modify each other, and their evolution is almost normal. The appearance of measles nearly always exercises an influence on the frequency and character of the paroxysms of whooping cough, but this influence is very variable. According to Rilliet and Barthez, the attacks of coughing do not diminish in number, but change in character. The author cites other writers in regard to this influence, and states that in his case the attacks of coughing underwent the modifications pointed out by these writers ; but that they became more suffocating and duller, and that they produced a shock which remained after the attacks ceased. If measles modifies the form and the number of the paroxysms, the whooping cough manifests its action on the eruption of the former disease by giving to it an ecchymotic aspect. This peculiar aspect of the eruption may extend to the entire surface of the body or may be limited to certain regions, particularly to those in which the skin is fine, and where the eruption has been more intense.

The spots may become confluent and may be accompanied by petechiæ and large ecchymoses which may affect the eyelids especially and the conjunctiva. On the following days the colour becomes successively brown, a grayish-yellow, and a dirty yellow, and finally disappears after a fortnight. When measles precedes whooping cough, the latter is ushered in by different symptoms according to the period in which it appears. If it occurs during the first stage of measles, it does not change the aspect considerably, the febrile condition and the morbillous cough remain the same, and the eruption continues regularly, according to Roger. More frequently whooping-cough occurs toward the tenth or the fifteenth day after the extinction of the morbillous exanthema and of the fever. The cough and an elevation of temperature announce its appearance. (From abstract in the New York Medical Journal, May 22, 1897.)

MEASLES.—Early Diagnosis of.

Koplik (*Arch. of Pediatrics*, December, 1896) states that one of the most, if not the most, reliable signs of the invasion of measles has failed to receive due attention. He refers to the exanthematous eruption on the buccal mucous membrane. This reaches its height just as the skin eruption appears and is spreading; when the skin eruption is at its efflorescence, the buccal eruption has begun to decline. There is nothing specially distinctive about the condition of the pharynx or hard and soft palate in measles. The first twenty-four to forty-eight hours of invasion of measles is marked by suffusion of eyes, slight febrile movement, and perhaps cough or a little sneezing. At this period the skin eruption has not made its appearance, but on examining the mouth there may be a redness of the fauces. If now the buccal mucous membrane and the inside of the lips are examined, a distinct eruption of small irregular spots of a bright red colour is invariably seen; in strong daylight, in the centre of each spot is seen a minute bluish-white speck, which is absolutely pathognomonic of commencing measles. They do not occur in the palate. The number varies, sometimes requiring careful search. These spots are very different in appearance to sprue spots; the small specks retain their punctate character, and never coalesce. This diagnostic test is of greatest value at the very outset of the disease. In scarlet fever the buccal mucous membrane is not affected; it is sometimes affected by simple aphthæ, but here the spots are not so bright red, and do not show the bluish-white specks. Rötheln, properly so-called, has not the eruption on this mucous membrane. Commencing *grippe* in many cases resembles the onset of measles, but again this affection of the mouth is absent. In some cases of measles the

spots are so few as to escape a casual examination ; it is, therefore, well to carefully examine the mouth in a strong light from a window. (British Medical Journal Epitome, March 13, 1897.)

MILK, TUBERCULOUS.

Some astonishing results have been published in connection with an inquiry into the bacteriology of the milk sold in Paris. An order was decreed that samples of the milk sold should be bacteriologically examined in the municipal laboratory. Of the ten samples which were thus submitted to analysis, six were found to possess no pathogenic bacteria, while four contained tubercle bacilli in abundance. In view of this revelation, it has been pointed out by the authorities that sterilised milk should alone be given to infants and young children, while, also, persons predisposed to tuberculosis should be careful to confine themselves to milk similarly prepared. (Medical Press and Circular, January 27, 1897.)

ŒDEMA.—Treatment of.

Rotmann (*Deut. med. Woch.*, 1896, Nos. 48 and 49) first refers to the various methods of treating œdema by incision, puncture, including Southey's trocars, &c. He has used cannulæ from 10·5 to 11 cm. long, and from 1·50 to 1·75 cm. in diameter. The skin was always thoroughly cleaned, and the instruments, together with tubing, previously boiled in soda solution. The places chosen for the insertion of the cannula were those in which the œdema was more recent, and the skin and subcutaneous tissues were not hardened by inflammatory changes. It is well to apply boracic ointment round about the puncture, so that if any fluid escapes to one side of the trocar, it will not irritate the skin. If the flow of fluid stops, it is mostly due to a clot in the cannula or tube. Usually a cannula was placed in either leg and left for twenty-four or more recently thirty-six hours. An absorbent aseptic dressing with moderate pressure is afterwards applied. The wound can be closed if desired with collodion. The author has never seen any unpleasant result follow upon the drainage when practised in this way. Details are then given of 9 cases, among which 6 were examples of renal disease, 2 being acute, and the rest chronic. In 7 cases, abundant fluid was thus drained away. In one case the amount was only moderate, and in the remaining one there was hardly any. Perhaps in this last case it might have been well to make incisions. The cases of acute nephritis recovered completely. In 3 other cases the good results obtained persisted for a long time. If the drainage does nothing else it often considerably relieves the patients. In all the cases the ordinary treatment by drugs, &c., had been tried first. (British Medical Journal Epitome, January 9, 1897.)

OILY ENEMATA.—Administration of.

Oil has of late been administered by the rectum with good results to patients worn out by wasting diseases. The best method of administration is not yet agreed upon. Deucher, who has experimented extensively along this line, reports in the *Semaine Medicale*, April 9, 1897, that the maximum of absorption is attained with an emulsion of equal parts of oil and a solution of sodium carbonate, to which is added a little sodium chloride. The whole is administered at the temperature of the body. (Medical News, May 22, 1897.)

OSTEOMALACIA AND OPOTHERAPY.

Senator (*Berl. klin. Woch.*, February 15, 1897) concludes an article on this subject. In commenting upon a case treated with thyraden and oöphorin, he observes that although there was considerable improvement in the subjective symptoms, and also in standing and walking, yet the good results are not altogether to be attributed to the organotherapy. The hygienic conditions of the patient were much improved. During the treatment the patient lost weight, and excreted more nitrogen than formerly, but the excretion of lime salts was considerably diminished during the period of treatment with oöphorin. Fehling observed a similar decrease in a case where Porro's operation had been performed. Neumann also noticed a like diminution during the period of improvement. The excretion of phosphoric acid ran parallel with that of the lime salts during the thyraden treatment. In the author's case it was observed that improvement also occurred at a time when there was no diminution in the excretion of lime salts. The increase during the oöphorin treatment was not due to any lime salts present in the oöphorin tablets. Probably the increase in the solid constituents of the urine was due to the increased diuresis. It has been proved that increased nitro-genous excretion results from increased albuminous decomposition, and, further, that increase in the alloxuric bodies in the urine and augmented diuresis are the results of thyroid treatment. The excretion of lime salts may thus also be increased. Of the action of oöphorin on metabolism, there are few, if any, details. The author's investigations require further confirmation. The oöphorin used here would appear to act upon metabolism like thryroid preparations with the exception of the lime salts, but in a less marked degree. In eighteen cases the oöphorin was well borne, and there was no palpitation, no increase in the pulse-rate, and no albuminuria, nor yet any alimentary glycosuria. The author thinks that oöphorin is worthy of further therapeutic and experimental investigation. (British Medical Journal Epitome, April 24, 1897.)

PESTIS MINOR.

Dr. Lowson differentiates in these terms between "pestis minor" and "pestis ambulans." Pestis minor is that bubonic disease which occurs (?) before an outbreak of plague, while pestis ambulans is the designation applied to glandular enlargements occurring during or after an epidemic which may probably be due to a less potent infecting power. As to the existence or non-existence of "pestis minor" or "pestis ambulans" in Hong-Kong, we can but rely upon those observers who were present during the outbreak, and it is unfortunate that there is this difference of opinion. There can, however, be no doubt that the existence of anomalous glandular swellings during prevalences of bubonic plague is recognised by many observers and by most writers, and that there should be these anomalous expressions of the plague is what upon general epidemiological grounds is to be expected. One of the best known instances where these glandular enlargements were seen was in the outbreak of plague which occurred in Mesopotamia in 1876-77, and of which a most interesting account, by Dr. E. D. Dickson, may be found in part 11, vol. iv. of the Transactions of the Epidemiological Society. It is "pestis minor" or "pestis ambulans," as described in this account, which the medical officers of health in such of our ports as have communication with India will do well to be on the look-out for. (From a leaderette in The Lancet, March 6, 1897.)

PHARYNGITIS, RHEUMATIC.

Pharyngitis is a very common complication of acute rheumatism. It usually appears a day or two before the onset of the articular pain, but occasionally the throat is only complained of after the disease has fully declared itself. On examination the margin of the soft palate, the tonsils, and the posterior wall of the pharynx will be found of a deeper red colour than normal, and somewhat swollen. Occasionally there is œdema of the mucous membrane, more especially of the uvula. In some cases the symptoms of rheumatic pharyngitis are so slight as not to be mentioned by the patient unless questioned on the subject. In the more severe forms the usual symptoms of dysphagia, pains in the ears and difficulty in speaking, are met with. The rheumatic origin of tonsillitis in many cases is now fully recognised. Lacunar tonsillitis is the form which usually occurs in connection with rheumatism. It must be borne in mind that though cardiac lesions are seldom seen when sore-throat is the chief feature of a rheumatic attack, still, cases do occur in which endocarditis and pericarditis are met with, even when articular pains are entirely absent. (From Dr. de Havilland Hall's lecture in The Lancet, February 27, 1897.)

PLAGUE, BUBONIC.—Treatment of.

Dr. E. Roux describes the preparation of the serum by Yersin as follows :—The subcutaneous injection into horses of a fresh plague-bacillus culture upon agar having been followed by severe local swelling, a fever which disappears, and an abscess, the intravenous inoculation was resorted to, and in this way abscess-formation was avoided. Vigorous reaction follows these injections until, after repeated and stronger doses, immunisation is accomplished. Three weeks after the last injection a serum is obtained by venesection. In the first instance of its use two injections of two drachms each sufficed for a cure. Of twenty-three patients subsequently treated, but two died; both received their first treatment on the fifth day of the disease, one dying five and the other twenty-four hours after the single injection. It should be remembered that the serum does not long retain its activity, and, as compared with that for the treatment of diphtheria and tetanus, that it is weak. It is desirable that we should have a more powerful serum, which shall act better and in smaller doses. In four instances more serum was used than was necessary, and injections were made during convalescence in order to insure cure. To answer the question whether this serum possesses an antitoxic or only an antibacterial action presupposes a knowledge of the toxin of the plague; this is wanting. Although at present this serum has been used only upon patients with developed disease, yet it is fair to presume that it is still more valuable as a preventive, thus limiting the disease to its point of outbreak.—*Therapeutische Wochenschrift*, 1897, No. 5. (American Journal of Medical Science, April, 1897.)

PLAGUE.—Vaccine against.

Professor Haffkine has succeeded in elaborating vaccine as a prophylatic for plague. He has experimented with it on himself without undergoing any greater inconvenience than a slight attack of fever, raising his temperature to 102 degrees and a slight headache, both disappearing within twenty-four hours. Several medical men have been inoculated with the vaccine with very similar effects. Dr. Haffkine communicated the results of the experiment in a letter which was laid before the Standing Committee, Bombay. Mr. Snow, after consultation with Dr. Weir, proposed to issue a small quantity of vaccine to a certain number of the medical practitioners, with a request that they would carefully watch the effect of the application of the vaccine and report on it to the Health Officer and Dr. Haffkine. The vaccine is not a curative serum, but protective lymph, which will, to a certain extent, enable the system to offer resistance to an attack of bubonic fever. (Indian Lancet, February 1, 1897.)

PYRAMIDON.—A new Antipyretic.

(*Therapeutische Monatshefte*, January, 1897.) This new drug, which is a derivative of antipyrin, is a tasteless, yellowish-white crystalline powder, soluble in 30 parts of water. A solution of it treated with perchloride of iron gives an intense bluish-violet coloration, which quickly changes into violet, soon becomes paler, and disappears. Filehne and Spiro find that in normal animals its action on the nervous system, on the blood pressure, and on the temperature is similar to that of antipyrin. But there are certain differences of considerable practical importance. The dose of pyramidon is much smaller than that of antipyrin. In the frog it is four times, and in warm-blooded animals (including man) it is three times more active than antipyrin. Further, its action is slower and more persistent than that of the latter drug. Its effects disappear also more slowly than those of antipyrin. So far the experiments carried on with the drug at the Breslauer Klinik have given very satisfactory results. For adults, doses of 0,3-0,5, repeated once or twice daily, seem the most suitable. It is best given dissolved in 30 parts of water. (Australasian Medical Gazette, March 20, 1897.)

QUININE, HYPODERMIC INJECTIONS OF.

F. Blum (*St. Petersburg medic. Wochenschr.*, 1896, xxi, 285) and his *confrères* in Africa have administered quinine hypodermatically for the following reasons :—(1) In a great many cases quinine is not borne by the stomach but rejected, and the patient waits for the next visit of the doctor before taking another dose, usually with the same result. (2) Among the lower classes there is a great prejudice against quinine, because they believe it produces an enlarged liver and a protruding abdomen. They ascribe to quinine the effects of the intermittent fever. (3) In children it is frequently impossible to get them to take the medicine in any form, and ointments are seldom employed long enough to cause any absorption of the quinine. The solution used consists of :—℞ Muriate of quinine (basic), 3 grm. ; analgen, 2 grm. ; boiling distilled water, 6 grm. The syringe holds 0·50 grm. of the solution, *i.e.*, 0·30 grm. of muriate of quinine and 0·20 grm. of analgen. This remedy was used :—(1) In cases of remittent fever in which quinine was refused by the stomach, or where the fever continued over a week, notwithstanding quinine was taken by the mouth. (2) In repeated attacks of the fever, or in patients expecting another attack after the first one had just passed off. The doses are 1 grm. for adults, 0·50 to 0·70 grm. for children. In the algid form 2 grm. of ether are to be injected at the same time. In

no case was more than 1·50 grm. used in one day. The results have always been good. (Pediatrics, February 15, 1897.)

RHEUMATIC AFFECTIONS.—Hot-air Treatment.

The Tallerman-Sheffield apparatus is made in various forms and sizes suitable for the different joints or limbs to be treated, viz., for the hand, arm, elbow, foot, leg and knees, and there is also one for the pelvic region. The hospital model, the one mostly supplied to institutions, is constructed so as to enable the treatment of the extremities and to obtain a general effect upon the body. Cylindrical in shape, the apparatus is sufficiently long to admit a leg to some inches above the knee, the end through which the foot enters is furnished with a curtain which is bound round the leg, the distal end is furnished with a cap working on a pivot which acting together with valve taps at the top and bottom of the cylinder enables the moisture thrown off by the limb to be expelled or evaporated, and the air contained in the chamber to be again dried. The highest temperatures at which patients have been treated, according to hospital reports, are from 300° to 315° F., but the great value of the Tallerman treatment is the ability to administer these high temperatures over a period of upwards of an hour if necessary. Experimentally a patient had been treated for more than two hours at a temperature averaging 260° F., without any other discomfort than lassitude on the following day, the skin was not unfavourably affected or unduly sensitive, and it could be rubbed briskly with a towel when released. The therapeutic effects produced are relaxation of the part, copious and free perspiration over the whole of the body, enormously increased circulation and raising of the body temperature of from $1\frac{1}{2}$° to 4° F. This last effect, so contrary to the belief hitherto held that the body temperature could not be raised by a local application of heat is remarkable, and it is the belief of Tallerman, will before long be shown to have a very material and beneficial effect in the treatment of diseases other than in the classes of cases which until now have been subjected to it ; these are such cases as : rheumatism, acute, sub-acute and chronic, acute and chronic gout, rheumatoid arthritis, sprain, stiff and painful joints, gout, rheumatic sciatica, lumbago, peripheral neuritis, gouty neuritis, &c. Also before and after breaking down of adhesions, and kindred complaints. The Tallerman treatment has been demonstrated at some of the principal London and other hospitals, and during the course of the three years supervision to which it has been subjected it has been proved that the treatment can be safely administered with benefit even where great debility, weak action or valvular disease of the heart or kidney disease are present. Rheumatic

and other pains are relieved, if not entirely removed, shortly after the commencement of the first operation, and that the treatment itself is not only absolutely painless, but so soothing as to frequently lead to patients falling asleep, if permitted, whilst under it, hence the sleeplessness caused by rheumatic pain is relieved, and patients are able to rest at night. (From Drs. Stewart and Reilly's paper in the Montreal Medical Journal, March, 1897.)

RHEUMATISM.

I propose to specify what should be included under the term rheumatism, and then briefly to discuss the evidence which justifies such inclusion. (1) Rheumatic fever, with inflammation of a fleeting character of the synovial membrane, chiefly of the larger joints, without grave and permanent alterations in the inflamed tissues; attended with fever and acid perspirations; often preceded or accompanied by sore throat, and frequently associated with inflammation of serous membranes. (2) Subacute rheumatism, in which the joint affection is not so severe, and the pyrexia and sweating are less, but which may have the same accompaniments. (3) Chronic rheumatism, in which there is more or less frequent pain and stiffness in the joints. (4) Inflammation of tendons (especially of the hamstring muscles), of the fasciæ and muscles (especially of the neck, back, and soles of feet), and of nerves (especially of the sciatic). (5) Inflammation of serous membranes, the endocardium, the pericardium, the pleura, and probably other serous membranes. (6) Chorea, or rheumatism of the brain. (7) Exudative erythema. (8) Purpura. (9) Subcutaneous nodules. (10) Tonsillitis, or rheumatism of the throat. (11) Pneumonia (?) (12) Hyperpyrexia—a complication, not a separate event. I have not included anæmia in the rheumatic series, for though it is a marked and characteristic feature of rheumatism, it is most frequently the effect of some definite rheumatic manifestation. It is more than possible, however, it is a predisponent to a rheumatic attack in those otherwise liable to it. (From Dr. Stephen Mackenzie's paper in the Edinburgh Medical Journal, January, 1897.)

RHEUMATIC INFLAMMATION OF TENDONS, FASCIÆ, MUSCLES, AND NERVES.

In children, inflammation of the tendons in the immediate neighbourhood of the joints often takes the place of articular inflammation and effusion. Cheadle has pointed out that it is especially the tendons of the hamstring muscles—the biceps, semi-tendinosus, semi-membranosus, gracilis, and sartorius—which are liable to be involved, and that walking with bent

knees on the tips of the toes to avoid tension of them is very characteristic. Torticollis is often of rheumatic nature. Lumbago is frequently caused by rheumatism, though it also occurs in the gouty. I have seen several cases of pain and stiffness in the soles of the feet, rendering locomotion very difficult, and compelling the patient to walk on the tips of the toes. It is probably due to inflammation of the plantar fasciæ and tendons. Acute generalised myositis with fever, a rare disease, of which I have seen a few examples, has seemed to me probably rheumatic in nature. Lumbago is frequently caused by rheumatism. Rheumatism is regarded by most as a cause of sciatica and of inflammation of the nerves, though, of course, it is not the sole cause. (From Dr. Stephen Mackenzie's paper, in the Edinburgh Medical Journal, January, 1897.)

RHEUMATIC SUBCUTANEOUS NODULES.

First described by Hillier in one case in 1886, later by Meynet, we owe to Barlow and Warner the most full description concerning their occurrence and significance. These nodules, varying in size from a hemp-seed to an almond, are attached to tendons, deep fasciæ, and the pericranium, generally over bony prominences, and consist of vascular fibrous growth. They are one of the most characteristic of the rheumatic phenomena. They are met with almost exclusively in children and young adults, and occur with several of the rheumatic series, rheumatic fever, chorea, endocarditis and pericarditis, exudative erythema and purpura. They are so characteristic of rheumatism that they are a connecting link in the chain of rheumatic events. Moreover, they are especially associated with the graver forms of endocarditis and pericarditis, and are thus not only of diagnostic, but of prognostic, significance. When found with any one of the phenomena claimed as rheumatic, they clinch the diagnosis. (From Dr. Stephen Mackenzie's paper in the Edinburgh Medical Journal, February, 1897.)

RHEUMATISM, ACUTE.—Contra-indications to the Use of Salicylates in.

Chassevant contributes a paper with this title to *La Semaine Médicale*, No. 54, 1896. He points out that according to Jaccoud the salicylate of sodium is contra-indicated in those cases of acute articular rheumatism in which there is a predominance of visceral complications. Under these circumstances Jaccoud prescribes tartar emetic in large doses, and, if necessary, adds opium to the dose in order that the patient may withstand it, thereby checking the diarrhœa and tendency to vomiting. The result of the use of this remedy is usually a fall in the

fever, the quieting of the nervousness, and never when it has been instituted has Jaccoud met with pericarditis or cerebral accidents of a serious character. Chassevant asserts that a number of other physicians sustain this clinician in his assertion that the visceral phenomena are benefited. He quotes Donald Hood's paper, published in 1881, in which 350 cases of acute articular rheumatism were treated by the salicylate of sodium. Out of these 350 cases 241, a proportion of 80, suffered from cardiac complications. Smith, in 1882, published the statistics of 1,724 patients suffering from polyarticular rheumatic fever treated in various ways. Of this number 5 per cent. had cardiac complications. (Therapeutic Gazette, March 15, 1897.)

ROENTGEN RAYS.

At the Vienna Medical Club, Wasserman showed two cases which he had diagnosed by the Roentgen rays. The first was a case of phthisis in the right lung where the cavernous symptoms by percussion and auscultation could not be elicited. With the rays the left side of the chest appeared clear and healthy, while the right exhibited diffuse shadows representing infiltration; in one place a very clear area was brought out by the light when applied either in front or behind the right lung, which to all appearance corresponded to a cavern. The case is being further subjected to the ordinary methods of testing in this disease. The second case was that of an aneurism in the left mediastinum, where a dark space was exhibited by the rays; the margin of the surface could be seen moving with a distinct impulse, which may be accepted as a secure differential diagnosis between tumour and aneurism. (Medical Press and Circular, February 3, 1897.)

ROSEOLA, EPIDEMIC.

The disease has been mild throughout, the highest temperature being 100·4 deg; in several patients it did not rise above normal. Catarrh of the eyes and nose has, to a slight extent, been present in the majority, but in some absent. Slight faucial congestion and dryness has also been generally present; the tongue has been often furred, and occasionally the papillæ have been prominent. The enlargement of the cervical glands, which seems to be the most characteristic feature of the disease as described by other writers, is a phenomenon which was necessarily masked by our patients having all had scarlatina, but in the few cases where adenitis was not already present it was observed that it occurred. The rash was the main point in the diagnosis. In general it was punctate in origin, the points being of a size which was mean between those of measles and scarlet fever. They were sometimes surrounded by an areola

and sometimes not. These points were rarely seen separately, but generally coalesced into minute patches of less area than those of measles, and not nearly so much raised. They were, besides, of more regular outline. When this was general over the body it exemplified the morbilliform type of rash. But the coalescence might be general, and also accompanied by an erythema, as in scarlatina, and then it was almost an impossibility to distinguish it from a scarlet fever rash. Both of these types might be present at the same time on different parts of the same person, and a measly face might accompany a scarlet body. The colour was not like that of either the measles or scarlet rash, but more of a rose-pink. The development of the rash was as follows :—Generally it was first seen on the cheeks, and almost immediately after on the arms and legs, thence extending over the whole body, though in some cases the trunk remained free. The whole duration was rarely more than two days. On one occasion, when it was carefully observed, it was completely out in less than eight hours. (From Drs. Brownlee and Marshall's notes on an epidemic, in the Glasgow Medical Journal, February, 1897.)

SCARLET FEVER.—Relapse in.

That the relative severity of the relapse and of the primary attack are usually in inverse proportion is even more true of scarlet fever than it is of either enteric fever or diphtheria ; and, moreover, the gravity of the scarlatinal relapse is apt to be considerable,—indeed, I am not sure, in reviewing my own experience, that it is not more often so than mild ; so many of those I have seen have taken on a septic character. The relapse may occur at any stage of scarlet fever convalescence from the ninth or tenth day onwards. I have seen instances of a relapse arising every week from the second to the sixteenth. When the interval becomes extended to this length one is inclined to speak of them as second attacks. Whitelegge states that they are most frequent in the fourth week. Youth seems to be a predisposing factor, but sex appears to be without influence. The occurrence of a relapse has a very important bearing on the determination of the length of quarantine. My own practice is to regard a patient who undergoes a definite relapse as equally infectious as one who is the subject of a primary attack, and I regard the same length of quarantine as indicated. I may say in passing that in respect to the partial redesquamation which occurs in some patients, usually limited to the hands and feet, I should not regard the second peeling as necessarily or even probably infectious unless it had been preceded by a definite relapse. You are occasionally confronted with this problem in practice, and your decision may be

of considerable importance to the patient. The question as to whether these cases of a second appearance of the signs of scarlet fever in the same individual should be regarded as a re-infection from within, or whether they should more properly be regarded as a distinct second attack, in other words a re-infection from without, is one which is certainly open to discussion. The fact, at any rate, must be admitted, that such cases are evidence of a renewed susceptibility after a comparatively short interval in a particular subject. The immunity conferred by the primary attack in some persons is more short-lived than it is in others; and whether the re-infection be intrinsic or extrinsic in its origin is of little moment apart from its bacteriological interest. That second attacks of scarlet fever are much more frequent than is usually held by the profession at large I am quite convinced, if one may judge by the fact that such cases are from time to time reported in the medical journals as being of distinctly unusual occurrence, and therefore worthy of being put on record. In the fever hospitals their more or less frequent occurrence is well recognised, and excites but passing interest; and that they do occur more frequently in patients treated in the fever hospitals than in an equal number of cases treated in their own homes is, I think, beyond dispute. (From Dr. Foord Caiger's paper in St. Thomas's Hospital Reports, vol. xxiv., 1897.)

SEA SICKNESS.

I have found the following prescription of great value:— ℞ chloroform. pur. ℥j; tr. nucis vom. ℥j; tr. lavand., ℥x; aq. ad ℥j. M. ft. mist. To be well shaken, and one teaspoonful taken every hour until the nausea is relieved, and liquor morphini acetatis ℥v if there is much pain. A tight binder will often relieve the pain due to straining, especially in uterine cases. Alcohol is unnecessary in most cases, and I think many people take too much if left to themselves. Milk and soda, beef tea, beef jelly, should be given in small quantities at frequent intervals, and crushed ice given to suck. I think many patients would derive considerably more benefit from the voyage if medical men made it a rule to give them a few hints before sending them on board ship, and also not to neglect to give them a letter describing their cases, which they may hand to the ship's surgeon should they find it necessary to consult him. (From Dr. G. W. Barber's paper, British Medical Journal, December 19, 1896.)

SECRETIONS, INTERNAL.

The following would seem to be the changes associated with symptoms of disease:—(1) Relative glandular inadequacy. Excess of substance acted upon by the internal secretion of

a gland, without due compensation. (*a*) Altered condition of gland leading to diminished activity and diminished internal secretion. (*b*) No disease or alteration of gland but excessive production or assimilation of the substance acted upon by the internal secretion. (2) Relative glandular over-activity. Excess of internal secretion. (*a*) Altered condition of gland leading to increased activity and increased pouring out of internal secretion. (*b*) No disease or alteration of gland, but diminished production or assimilation of the substance acted upon by the internal secretion of that gland. Changes unaccompanied by symptoms of disease :—(3) Compensation. Lesions of gland or altered systemic condition unaccompanied by symptoms. (*a*) Altered condition of gland leading to (i) increase or (ii) diminution of internal secretion, with due compensation. (*b*) (i) Increased or (ii) diminished production after assimilation of substance acted upon by internal secretions, with due compensation. (From Prof. Adami's paper in the Medical News, May 8, 1897.)

SERUM REACTION IN TYPHOID FEVER AND EXPERIMENTAL CHOLERA.

Drs. Johnson and McTaggart (*The Canada Lancet*, February, p. 307) draw the following conclusions from their observations on the reaction in typhoid fever and experimental cholera by the dried-blood method :—(1) the use of dry-blood serum diagnosis has given what appeared to be satisfactory results for diagnostic work. (2) An incomplete reaction was occasionally obtained as early as the end of the second day. (3) The complete reaction was rarely delayed beyond the fifth day. (4) Typhoid blood allowed to dry for 60 days still gave the typical reaction; this might permit of its application to medico-legal work. (5) In experimental cholera immunity, a typical reaction was obtained with dried blood. (6) The reaction may appear after a single dose of typhoid or cholera culture. (7) There is a possibility that the clumping of the typhoid bacilli may be utilised as a means of isolating them from cultures made from water, fæces, &c. (Medical Record, April 10, 1897.)

SNAKE-BITE.—Serum-therapy in.

Dr. Paul Gibier states that as soon as possible after the bite we should inject 2 to 5 drachms, and even more when the wound has been inflicted upon a person of large size by a dangerous reptile, as the rattlesnake. The injection should be made with the usual antiseptic precautions in the subcutaneous tissue of the lateral part of the abdomen. While the injection is being

prepared, and in case the bite has been inflicted on a limb, it is well to surround the latter tightly just above the bite, between the bitten part and the body, with a string, a handkerchief, or any other piece of linen. An excellent means of destroying the venom which has not been carried into the circulation consists of injecting into the puncture of the bite and surrounding tissues 2 drachms of a 1 to 60 solution of lime chloride. The same syringe may be used as for injecting the serum. A few minutes after injection the ligature may be removed. The patient is then rubbed vigorously and hot tea or coffee administered in order to determine an abundant perspiration. The action of fermented drinks or ammonia is dangerous. The local application of caustics is at least useless.—*Bulletin of the Pasteur Institute*, 1897, *No.* 1, *p.* 12. (American Journal of Medical Science, 1897.)

SPLEEN.—Recovery from Enormous Enlargement of. (By Dr. Montagu L. Griffin.) This case of gigantic enlargement of the spleen, in a man aged 42, followed by complete recovery under treatment by arsenic, is interesting, especially as it was uncomplicated by any leukæmic condition. (Details of the case are omitted here.) The anæmia altogether disappeared by the tenth month of treatment. The area of hepatic dulness became normal as the spleen shrank away from it. I think that its enlargement was only apparent, and due to the displacement of a plastic organ which was squeezed laterally. The interest in this case depends on the almost complete absence of symptoms in the face of such physical condition as may well be called stupendous. The judgment shrinks from estimating even the weight of the tumour which this man carried in his abdomen, one may safely say, for years. It rested in his left iliac fossa and was fixed there, whilst it rose so high into his thorax as to displace the heart upwards and to annul the respiratory function of the left segment of his diaphragm. It pressed the liver to the right and the left kidney backwards, so as to make a visible tumour in the left lumbar region behind. How it treated the stomach and bowels I am unable to say. Yet the patient comes into the consulting room complaining of dyspepsia, and only casually alludes to the fact that he has for years been growing too fat. That the anæmia was not excessive was evident from the comparatively slight functional derangements and the blood analysis, together with the fact that so soon as the tumour rose out of the pelvis and became movable his breathlessness ceased. And, finally, it is worthy of note that until the man was stopped working for fourteen days by me he had never missed a five hours' working day for fifteen years. (Dublin Journal of Medical Science, April, 1897.)

THYROID TREATMENT OF TETANY.

Dr. Lacone Maestro is said to have applied the thyroid treatment to tetany with some success. The thyroid gland was given raw or slightly cooked, and the dose, small to begin with, was gradually increased to thirty grains a day. Although only three cases were tried, the result seemed definite enough to allow the following conclusions to be made. The thyroid treatment is well borne by children, and the digestive functions and diuresis are not notably influenced by it, and it is only in certain cases that it is necessary to suspend the treatment from time to time. In idiopathic tetany the administration of thyroid gland was found to diminish the intensity and frequency of the attacks and shorten the duration of the disease, while at the same time this treatment is not opposed to the symptomatic treatment, as it does not present any incompatibility with the methods ordinarily employed. (Lancet, January 30, 1897.)

TOMATOES.—Poisoning by.

Dr. F. H. Edgeworth narrated a case before the Bristol Medico-Chirurgical Society. A boy was found lying unconscious in the street, with a half-emptied box of tomatoes beside him, and was brought to the Bristol Royal Infirmary on the evening of July 16. He subsequently confessed that he had been steadily eating them all day long. On admission he was unconscious and collapsed, but after a few hours partially recovered his senses. During many hours he repeatedly vomited and passed half-ripe decomposing tomatoes. The temperature gradually rose, and for the next week varied between 99° and 101·5°, then sank to normal, and remained so. The semi-conscious condition persisted for three days after admission, and was succeeded by one of mental weakness and irritability lasting for nearly a fortnight. In addition, however, there was much intolerance of light, together with severe frontal headache and retraction of the head; and on July 21, five days after admission there was double optic neuritis fairly well marked. These signs of meningitis gradually subsided and disappeared within four weeks. The muscles of the limbs wasted, with loss of knee-jerks and slight electrical degenerative reaction in the extensor muscles of knees and anterior tibial muscles; but there was no anæsthesia of the skin nor tenderness of the nerves and muscles, nor were there any pains radiating down the nerves. The peripheral neuritis, evidenced by these signs, was never very acute and slowly subsided; and the boy went home well, six weeks after admission. This case affords some evidence that both meningitis and peripheral neuritis may result from food-poisons, and suggests that in cases where the etiology of such conditions is doubtful, enquiry should be made for previous

symptoms, such as gastro-intestinal irritation, which might give a clue towards the discovery of such a case. (Bristol Medico-Chirurgical Journal, March, 1897.)

TONSILLITIS, FOLLICULAR.—Prevention of.

Maxson (*Journal of Practical Medicine*, December, 1896) states that prevention of follicular tonsillitis is desirable in at least two classes of cases : those occurring during an epidemic and those where there are repeated attacks occurring from once a month to once a year. Those occurring only during an epidemic can be prevented by a mild antiseptic throat wash, with or without the internal administration of benzoate of soda. It is the writer's custom to take a doubled piece of silver wire, such as is used for sutures, and solder its free ends to a large wire ; then dip the doubled silver loop into melted nitrate of silver, so as to make a small bead on its end, after withdrawing it from the melted silver salt. The silver wire is then bent half-an-inch from its distal end, so as to make an angle of 45 degrees. This bead of caustic is inserted into each follicle to its bottom ; the depth will vary from one-fourth to one-half an inch. One caustic bead will usually treat from one to two follicles. By means of several beads all the follicles may be treated. This treatment is undertaken at any time except when the tonsils are acutely inflamed. It requires one or two treatments effectually to prevent its return. He has used this treatment for eight or ten years and found it entirely reliable, and knows of no case that has not been given a very complete immunity, even when subject to attacks every two to eight weeks before the treatment. (From abstract in Therapeutic Gazette, February 15, 1897.)

TUBERCULOSIS.—Sanitaria for.

Dr. E. L. Trudeau comes to the following conclusions :— Sanitaria for the reception of advanced cases of tuberculosis occurring in the poor are greatly needed on philanthropic and sanitary grounds. Tuberculosis, if detected in its earlier stages, is curable in a fair proportion of cases ; it is of vital importance, therefore, that the diagnosis be made early. The best results in treating incipient tuberculosis are obtainable in special sanitaria situated in good climates. The best plan of construction for such sanitaria is the cottage plan, or some of its modifications. (New York Medical Journal, February 27, 1897).

TYPHOID FEVER.

Dr. E. W. Goodall notes two cases of enteric fever, in which a necropsy showed absence of the usual intestinal lesions. The first case was that of a boy 13 years of age, admitted into

the Eastern Fever Hospital in July, 1894. He died twenty-one days after admission, on the thirty-fourth day of the disease. The chief symptoms were continued pyrexia, a soft and frequent pulse, moderate diarrhœa and abdominal distension, bronchitis, restlessness and delirium, and towards the end muscular tremor, prostration, and coma. Spots were not observed until late in the disease. Post-mortem there was slight erosion of the Peyer's patches, which were slate-coloured, but no definite ulceration. The spleen was not enlarged; one parotid gland was suppurating. The second case occurred in 1888, and the account is taken from the hospital records. The patient, a man 30 years of age, died four days after admission on the fifteenth day of his illness. During life there had been numerous rose spots, continuous pyrexia, dilirium, and finally coma. At the necropsy the Peyer's patches were much swollen, but not ulcerated. The spleen was enlarged and pulpy. Fagge, Goodhart, Moore, Chantemesse, and Sidney Phillips have related instances of a similar nature.

Dr. Sidney Phillips on a former occasion had brought two cases of this description before the Society, and had since seen several fatal cases of typhoid fever without intestinal lesions or with only a single very small ulcer. (Lancet, February 20, 1897.)

Typhoid Fever, Food in.—The Via Media.

(From Dr. Ewart's paper in the *British Medical Journal*, May 1, 1897.) For solid food in the ordinary sense I am no advocate, either during the fever or during the first week of apyrexia. But I do not find in my experience of the last few years any support for the view that supplementing the milk diet with soluble and easily-absorbed food stuffs, which leave little or no fæcal residue, does anything but good, so long as the extras are carefully adjusted to the individual indications. As soon as the "typhoid" condition has been overcome by medication—and this is most often the work of a very few days—maltine is well borne, so is yolk of egg, and a little later the white of egg also, or calf's foot or chicken jelly. Yet later blanc mange, custard, honey, which is specially indicated in constipation, or even chocolate may be enjoyed; and, as digestion gains strength, the juice of oranges, the pulp of ripe grapes, and, as first suggested to me by Dr. J. W. Dickson, baked apples supply the grateful and healing fresh vegetable principles.

[See also *Retrospect*, p. 132.]

Typhoid Fever.—Intrauterine Mixed Infection in.

Numerous cases are now on record of infection of the fœtus in utero from the blood of the mother suffering from typhoid fever; but in all the cases thus far reported the typhoid bacillus

alone was found to have been the cause of the infection. A case recently reported by Dürck, in which the *staphylococcus pyogenes albus* was associated with the typhoid bacillus, is consequently of considerable interest (*Münch. med. Woch.*, 1896, No. 36). The child was a well-developed boy, who had been carried nearly to the completion of the normal period of gestation. He died almost immediately after birth, showing on examination a slight accumulation of cloudy serum in the peritoneal cavity and enlargement of the spleen. Cultures from the liver and spleen made immediately on opening the body developed the typhoid bacillus and the staphylococcus above mentioned. Sections from the spleen showed the same bacteria scattered through the pulp. The staphylococci were more numerous than the bacilli, both in the organs and in the cultures. (American Journal of Medical Science, March, 1897.)

Typhoid Fever.—Hemorrhage from the Bowels in.

Dr. William Osler (*Maryland Medical Journal*, November 14, 1896) writes the following :—Bleeding of moderate amount may occur and cause no special anxiety, except, perhaps, the unavoidable apprehension lest the bleeding should recur in a more grave form. Hemorrhage is one of the most dreaded accidents of the disease, and justly so, since it may occur when everything has gone along smoothly and the patient appears to be improving in every way. In 239 cases of typhoid fever treated in six years in the Johns Hopkins Hospital, there were twenty cases of hemorrhage ; three patients died from loss of blood, and three from perforation after bleeding had ceased. [Cases are quoted showing history, &c., of hemorrhage.] The treatment pursued is as follows :—The lead and opium pill by the mouth and small doses of morphine hypodermically. Normal salt solution is injected when there is much loss of blood, and favourable results follow its use in most desperate cases. A fatal result may follow in typhoid fever without blood appearing externally, so we must be on our guard. There are cases where hemorrhage recurs at intervals. (Medical Record, April 10, 1897.)

Typhoid Fever.—Relapse in.

In the very large proportion of attacks but one relapse occurs ; in exceptional cases, however, as recorded by Stewart and Trousseau nearly fifty years ago, a second relapse is noted. The same observation was made by Wunderlich and by Murchison, who reports two cases. In the course of the last twelve years I have met with two instances in which a typical second relapse occurred, and in each case the whole duration of illness extended over a period of more than three months.

Although instances characterised by two definite relapses—that is to say, three attacks, are extremely rare, it is not uncommon for the period of convalescence, even after the occurrence of one definite relapse, to be interrupted by one or more short pyrexial exacerabations of an irregular character, unaccompanied by the appearance of any noticeable complication. But in these cases the symptoms are not sufficiently pronounced to warrant the designation "relapse." Such a development is often ascribed to the effect of constipation. Murchison believed that males were more subject to relapse than females. In his experience the attacks were in the proportion of 3 to 2 respectively. This opinion, however, is by no means universal—so much so that Griesinger, as the result of his own experience, held the opposite view. Age seems to have no marked influence in determining the chance of relapse. My own feeling is that relapse is less common in children than in adults; but so is an attack of enteric fever itself, and consequently a deduction of any value can only be drawn from an examination of a very large number of cases. The average duration of a relapse is less than that of the primary attack, and the same thing may be asserted of its severity. All observers who have had an extensive experience of enteric fever are agreed upon these points, and deaths in relapse are comparatively infrequent. As a rule—and as to the truth of this I have very little doubt—the severity of the relapse and of the primary attack are in inverse proportion; but none the less the statement holds good, that the average severity of the relapse is less than that of the primary attack. (From Dr. Foord Caiger's paper in St. Thomas's Hospital Reports, vol. xxiv., 1897.)

TYPHOID FEVER AND OYSTERS.

(By Dr. McWeeney.) This research was very recent—published in the current number of the *Annales de l'Institut Pasteur* by Drs. Remlinger and Schnieder, of the French Army Medical Department. Their object was to ascertain whether the typhoid bacillus occurred in nature apart from cases of the disease. They employed Elsner's method for the raw material—soil, water, and fæces of non-typhoid patients—and in addition to the eleven characters relied upon by Lösener in his previous paper, they applied the serum-test by bringing serum from a horse immunised against Eberth's organism, in contact with the organism under examination. With the same object they used the serum of typhoid patients. Finally they inoculated suspected cultures into guinea-pigs with and without protective serum injections. Only when the suspected organism reacted precisely in the same way as typical typhoid bacilli under the same circumstances did they consider the identification complete.

Bacilli answering all the above tests were isolated from various samples of drinking water, soil, and fæces of patients who had never had typhoid fever. They saw themselves obliged to conclude that the typhoid bacillus is extremely diffused in our midst, and needs only favourable circumstances, such as temporary individual vulnerability, in order to effect a lodgement in the human system. Attacks and epidemics may therefore originate, so to speak, *de novo*—that is, without connection with any previous case of the disease, which amounted to a reinstatement of Murchison's views. (Dublin Journal of Medical Science, May, 1897.)

TYPHOID FEVER IN CHILDREN.

This was the title of a paper read by Dr. J. Llambias, of Buenos Ayres, Argentine, of which the following is a summary :—(1) We all know that typhoid fever presents itself in children with special symptoms. Amongst these are the mildness of its development, and the absence of complications which obscure the prognosis. (2) Many pyretic affections of infancy, with a short duration, cannot be specially localised in any of the organic apparatuses (clinically speaking), and are nothing more than mild forms of typhoid fever, as can be proved by a bacteriological analysis of the excreta. (3) If it is true that the diagnosis of these typhoid fevers are not of any importance to the practitioner as regards therapy, the same cannot be said with regard to the prophylaxis of this infectious disease, as the mild character of the affection does not prevent its propagating germs which are capable of assuming a greater virulence, once they find themselves in an adequate medium. (4) As far as regards measures of disinfection, therefore, these and other suspicious cases ought to be treated as typical typhoid fevers. (Pediatrics, January 1, 1897.)

TYPHOID ULCER.—Perforation in.

Finally, if I were to sum up my impressions formed from a study of this series of cases, and from my own experience in the management of the conditions presented, it would be somewhat as follows :—(1) Of all the so-called diagnostic signs of perforating typhoid ulcer most reliance is to be placed upon the development of an attack of severe, continued, abdominal pain, coupled with nausea and vomiting, and, at the same time, a marked increase in the number of white blood-corpuscles. (2) The surgical is the only rational treatment of perforating typhoid ulcer. (3) There is no contra-indication to the operation, surgically speaking, save a moribund condition of the patient. (From Dr. Finney's article in the Annals of Surgery, March, 1897.)

VACCINE-LYMPH.—Preservation of.

The following are Drs. Kitazato and Mumeno's conclusions :— (1) By adding the 0·66 per cent. to 0·8 per cent. solutions of carbolic acid into vaccine-lymph, the pathogenic as well as saprophytic bacteria in the lymph can be thoroughly sterilised without weakening the vaccine power. Thus we have succeeded to make the pure vaccine-lymph. (2) Such sterilised or pure vaccine-lymph, when inoculated either man or animal, forms the genuine vesicles and never causes unnecessarily severe inflammation. (3) In regard to the preservation of the sterilised vaccine-lymph, we are now investigating, and therefore we cannot mention the positive statement in comparing with ordinary vaccine-lymph. However, as far as our experience is concerned, the vaccine power of the sterilised lymph has not been changed, even after lapse of 100 days. (The Sei-i-kwai Medical Journal, October 17, 1896.)

VARICELLA.

(By Arthur Stern, M.D.) Varicella, once regarded as a slight and benign disease, has long since come to be recognised as potentially, at least, a grave one. During the last two decades there have come under our observation cases in which the disease either assumed a very serious character or was attended by complications of a serious nature. For example, Brunner reports a case during the progress of which there developed an acute inflammation in the region of the right elbow-joint, metastatic parotitis, otitis, multiple abscesses and infiltration of the right lung, and which terminated fatally. He further reports that the autopsy showed pus in the mediastinum, pericardium, bronchi, spleen and kidney, in which staphylococcus pyogenes aureus were found. The Russian author, Semtschenko, reports two interesting cases which came under his observation during the course of a very severe epidemic. In the one case there developed an empyema, in the other a putrid synovitis. Semtschenko observes that, inasmuch as the epidemic was then at its height, and as both cases developed at the same time, and there were entirely wanting any other data which would reasonably explain away the pleurisy and the synovitis, it seemed idle to contend that the latter were not legitimate possibilities of the varicella itself. Reference may be made also to Henoch's "Nephritis Varicellosa," which argues much, indeed, for the toxic properties of the disease, and necessitates the inclusion of a nephritis among its possible developments. During the past two years I have myself observed two cases of an uncommon character. In one of these the pustules became gangrenous (the accuracy of the diagnosis may safely be assumed since other cases of the disease had

developed in the same house and in other houses of the immediate neighbourhood). The second case was far more interesting. A boy of five years, and apparently in the flush of health, was taken sick in the evening with convulsions and high fever. The following morning I found a croupous pneumonia of the lower lobe of the left lung and varicella—pulse 130, temperature 104. The pneumonia rapidly assumed serious proportions, and induced great prostration, but terminated favourably on the fifth day. Instances multiply in which varicella is observed in conjunction with other forms of disease arising simultaneously or in immediate sequence, and which, in view of the remarkably few instances in which we find the simultaneous development of two or more separate diseases, seem unexplainable except upon the theory that there exists some special relation between the varicella and the disorders arising with it. (Pediatrics, December 15, 1896.)

WARM BATHS IN THE TREATMENT OF CHILDREN'S DISEASES.

Dr. Renant (*Therap. Wochenschr.*, 1896, i., 14) recommends the systematic use of warm baths for seven or eight minutes at a time, and of a temperature of 38° C., in all cases of acute bronchitis and capillary bronchitis, whenever the temperature of the patient reaches 39° C. The baths should be given daily, a little water at the room temperature being allowed to trickle over the child's head while it is in the bath. This treatment is to be combined with ordinary expectorant and supporting measures. The bathing may be continued from one to three weeks. Dr. Wolisch (*Therapeut. Monatshefte*, 1896, x., 254) recommends a somewhat similar method of treatment for cerebro-spinal meningitis in children. The child is lowered in a sheet into the bath at a temperature of 26° to 27° R., and hot water is added till 32° R. is registered. The ice-bag is applied to the head while the patient is in the bath. The theory is that the induced hyperæmia of the skin and surface relieves congestion of brain and cord, and acts like venesection without loss of blood. The sweating that usually follows a bath is also supposed to remove toxins.—*Pediatrics*, January, 1897. (Glasgow Medical Journal, March, 1897.)

WHOOPING COUGH.—Subconjunctival Hemorrhage in.

Dr. D. J. Milton Miller exhibited before the Philadelphia Pediatric Society a water-colour of a case of pertussis which was brought to the Children's Hospital with extensive hemorrhage into the conjunctiva and tissues about the eye. The whole of the white of the eye was involved. The

conjunctiva was ecchymotic and the iris depressed. The uncle of the child made the sketch, which very faithfully represents the condition. A rather curious phase of it was that the child did not have many paroxysms, although they were excessively severe. She did not bleed into the mouth or nose, nor did she vomit. She simply had hemorrhage into the conjunctiva. The disease yielded readily to antipyrin, so at the last visit the child had only one paroxysm in twenty-four hours. It is rather unusual to see such extensive hemorrhage as seen in this case. (Pediatrics, May 15, 1897.)

Whooping Cough.—Treatment of.

Although experience does not predispose medical men to expect that any one drug will act as a specific in whooping cough, there is no doubt that much relief may be given in the course of this intractable disease by the judicious and discriminating use of drugs, particularly in modifying the severity of the paroxysms. Dr. C. J. Kerley (*New York Polyclinic*, 1896, vol. 8) draws attention to the relief afforded by the administration of antipyrin, a drug whose value in this connection has been highly praised by Gerald Carré and others. Kerley does not find alum of service in the early stages, but there is some reason to think that it is of use in the later stages of the disorder. Expectorants, such as alkaline carbonates, are of use in the early stages, senega, squills, and compound tincture of camphor being more useful later. Marfan (*Rev. Mens. des Mal. de l'Enfance*, 1896) advocates in a temperate manner the employment of bromoform, which he finds more efficacious than antipyrin or belladonna. He administers it in two to three-drop doses to young infants, and from one to five years he gives four drops for each year of the age. He prescribes it in an emulsion of almond oil, mucilage, and cherry laurel water. (Treatment, March 11, 1897.)

AFFECTIONS OF THE NERVOUS SYSTEM.

ABSCESS OF THE BRAIN.—Differential Diagnosis of.

In the *Fortschrit d. Medecin*, November 15, 1896, Oppenheim emphasises the difficulty of differential diagnosis in traumatic brain abscesses, which may be confounded with traumatic meningitis, apoplexy, encephalitis, tumour, epilepsy, traumatic neuroses, &c. Cases cited prove how easily a one-sided traumatic apoplexy, or a hemorrhagic non-purulent encephalitis may, from symptoms alone, be taken for abscess. Oppenheim mentions a striking case in a boy, in which a wound in the forehead was followed by slow-pulse, optic neuritis, rigidity of the

neck, &c. A diagnosis of frontal abscess was made, but puncture gave no pus. On the following day the pulse was 144, there was fever and unconsciousness, and rapid death. The autopsy showed a well-developed tubercular meningitis. The boy was ill before the accident. The traumatism merely gave an impulse to the development of the disease. Suppurative meningitis occurring with an abscess is likely to be overlooked. An abscess of the brain is marked by normal or subnormal temperatures; fever is by no means a necessary symptom. If an attack begins with a rise of temperature, it is probably not due to an abscess of the brain—certainly not to an uncomplicated one. A slow pulse is, perhaps, the most reliable single symptom. It is also well to remember that patients suffering from ear troubles often become hysterical, and that a hasty diagnosis of hysteria, even if the typical symptoms are present, may falsely be made in cerebral abscess of otitic origin. (Medical News, January 16, 1897.)

CEREBELLAR TUMOUR.—Successful Removal of. No return of Symptoms for two and a half years.

Mr. Parkin (Hull) read notes of a case of a child aged 4, who came under his care in May, 1894, for gradually increasing difficulty in both walking and talking, and of several months' duration. At that time the child was listless and dull, and complained of constant headache. The gait was markedly ataxic, with a tendency to falling backwards, and the patient could not raise herself in bed without assistance. The left leg was rigid, both knee-jerks were exaggerated. Temperature was subnormal; pulse irregular, not slowed. There was no ocular paralysis, but there was intense optic neuritis with hemorrhages, not, however, accompanied with much loss of vision. The child was kept under observation for a month, during which time she had three very severe general convulsions, accompanied with marked cyanosis, the duration of each being about three-quarters of an hour. As the condition of the child was rapidly becoming worse, the cerebellum was explored. A large scalp flap, with the apex well down on the neck, was raised upwards, and after removal of the bone, a flap of dura mater, with its apex in the opposite direction, was turned downwards after ligature of the occipital sinus. A portion of each lateral lobe and the posterior part of the middle lobe were removed, these parts being obviously of a different colour from the rest of the cerebellum. Subsequent examination indicated that the tumour was of a gliomatous nature. The wound healed rapidly, and in the course of the next three months the child regained its power of talking distinctly and quickly, and at the end of that time could walk quite well; the optic neuritis

subsided, and up to the present time there had been no return of any of the symptoms. Since the operation the child had had whooping cough and measles, but no one would now imagine that there had been at any time anything very serious the matter with her. (British Medical Journal, December 19, 1896.)

CEREBRAL INJURY.

Mr. E. Solly (Harrogate) read (before the Leeds and West Riding Medico-Chirurgical Society) notes of a case of cerebral injury, presenting certain unusual features. A lad, aged nine, fell from a wall about eight feet high on to the ground, falling probably on the back of the head. He was able to walk home, a distance of about a quarter of a mile, without assistance, but shortly afterwards became gradually drowsy ; some slight convulsive movements were noticed, but unfortunately no skilled observation of their order or character was forthcoming. The family medical attendant, on arrival, found the symptoms of coma supervening, and at once telegraphed to Mr. Solly to come over and bring trephining instruments, as he supposed the case to be one of meningeal hemorrhage. In the interval of about forty minutes before Mr. Solly's arrival, the patient began to show signs of returning consciousness, and it soon became evident that no immediate operation was advisable. The improvement continued, and after passing through a stage of "cerebral irritation," lasting a few days, the boy made a perfect recovery, and is now quite well, exhibiting no sign of cerebral lesion whatever. Mr. Solly commented on the fact that the supervention of coma after an interval of consciousness following a head injury was generally taken as evidence of meningeal hemorrhage ; and for such, trephining, with a view of securing the damaged vessel, was usually held to be the proper treatment. This case he considered was worth quoting, as showing that the symptom, at any rate in children, did not point to the absolute necessity of immediate surgical interference. (British Medical Journal, March 6, 1897.)

CHOREA.

By Professor Krafft Ebing (*Allg. Wien. med. Ztg.*, 1897, Bd. iii.). In the treatment of the general condition, nothing approaches arsenic for soothing the general irritability of the nervous system, while nux vomica may also be of service. Chorea gravidarum occurs generally in primiparæ who have married young and are of weak constitution. It occurs generally after the fifth month. Bamberger has shown that there is a chorea gravidarum gravis, which commences in the eighth or ninth month, with a mortality of 30 per cent. Chorea in adults over 30 years comes on gradually ; is difficult to

subdue ; while its victims often develop *tædium vitæ* and suicidal impulses. It is, happily, rare, and in one case he found that hyoscin acted beneficially for a time, although later on the disease progressed. Krafft Ebing has seen three cases of chorea senilis, of which Charcot in all his wide experience only observed four. It is due to alterations of the cerebral cortex, is very fatal, and seldom lasts more than one year. He mentions two forms of chorea electrica, the first as described by Dubini in Milan, which appears to be very infectious, and leads eventually to muscular paresis ; the second, a form described by Henoch, which is very amenable to treatment, and can be differentiated from myoclonie by the fact that local areas and entire muscles are affected. (From abstract in Edinburgh Medical Journal, 1897, p. 428.)

CHOREA IN YOUNG WOMEN.

The following remarks by Dr. A. Napier are based on his cases :— (1) The gravity of the disease iu its severer forms, two cases out of six having proved fatal. (2) Sex, all the patients having been women. (3) The association of rheumatic phenomena (articular, endocardial, and pericardial) or scarlet fever with this disorder. (4) The occurrence of the chorea on the same side as the preceding rheumatic affection in cases in which both ailments were slight. (5) The presence of actual mania, which in its acuteness seemed proportionate to the violence of the muscular movements. (Glasgow Medical Journal, February, 1897.)

DELIRIUM TREMENS.—Cold Baths in.

Lettule (*Centralbl. fiir Ges. Ther.*, January, 1897) recommends as a sedative in delirium tremens a cold bath of 65° F., the patient being immersed in the water to his shoulders, while water of the same temperature is poured over his head. In a severe case in which large doses of morphine subcutaneously and chloral by the mouth had failed to give sleep in two days, and death was expected, a bath of the temperature of 65° F. increased in the first three minutes cyonosis and excitement. In six minutes the aspect of the patient completely changed. His excitement disappeared, he seemed to awaken from a dream, asked where he was, drank eagerly two glasses of warm wine, and wanted to sleep. He was placed in bed and immediately fell asleep. The following day, on account of recurring excitement, it was necessary to repeat the bath four times. There was no further delirium and the patient recovered. In a second case it was necessary to leave the patient twelve minutes in the bath, when as suddenly as before there was quiet, thirst, and a desire for sleep, followed by complete recovery in two or three weeks. (Medical News, April 24, 1897.)

EPILEPSY.—Sulphonal and Trional in.

In the October number of the *State Hospitals Bulletin* Dr. Henry P. Frost, of the Willard State Hospital, states that some of the patients have been treated with sulphonal and others with trional, also that there is reason to expect from them effects at least equal to those obtained from other sedative and hypnotic drugs. The dose varied from 5 grains twice daily to 10 grains three times a day, the object being to obtain no more than a fairly pronounced effect. The larger dose mentioned was needed only for a few days in any case, and after the patients were placed in this way thoroughly under the influence of the drug, the size and frequency of the dose were diminished according to individual susceptibility. In only one case was it necessary to discontinue the treatment altogether on account of unfavourable symptoms. Dr. Frost thinks that these two drugs, and probably others of the same class, will prove useful in a considerable number of the epileptic cases which claim attention in the State hospitals—not as specifics or even as substitutes for the bromides in the majority of cases, but rather as adjuncts to the bromides with which they can profitably be alternated ; and, in particular, as safe, effective, and pleasant sedatives for the epileptics, who, on account of their restlessness and obstreperous tendencies, stand in need of such treatment. It is possible, he thinks, that their extended use may lead to a different conclusion, but so far as his observations have gone their action has appeared to be decidedly beneficial and a further trial seems justified. (From abstract in New York Medical Journal, March 6, 1897.)

Epilepsy.—Treatment of.

One hears Flechsig's combined opium and bromide treatment for epilepsy highly commended for cases that have proved recalcitrant to the bromide alone. It is no uncommon thing to see at the Salpétrière, however, cases that are said to have been treated by bromides, sometimes in large doses, without noticeable improvement, improve rapidly, nevertheless, under a systemised course of the bromides. The system of dosage of the bromides comes from Charcot, who found it extremely satisfactory in the routine treatment of epilepsy. The formula given is :—℞ Sodii bromid., ammonii bromid., potassii bromid., aa 23 grams ; aquæ, 1000 c.c. During the first week (in ordinary cases) three teaspoonfuls a day is given ; during the second week four teaspoonfuls ; during the third week five teaspoonfuls, and then the original dosage is resumed and the course begun over again. When the case is more serious the dosage begins with a higher number of teaspoonfuls, but is

increased in the same way. The merit claimed for the treatment is that it gets the patient thoroughly under the influence of the bromides with the administration of the least possible amount of the drugs. (Medical News, April 10, 1897.)

Epilepsy.—Treatment of.

Flechsig (*Neurol. Centralblatt*, January, 1897) reviews the unfavourable results of the Flechsig treatment of epilepsy with a combination of opium and bromides, as reported by several writers recently ; he considers that in the fatal cases recorded no casual relation to the treatment has been shown, and points out that a fatal result is common enough in status epilepticus without any opium treatment. A careful watch should be kept by the physician for any untoward symptoms, which would indicate withdrawal of the drug ; and Flechsig is more inclined to blame the physician than the drug for the fatal results. His own experience of his treatment by increasing doses of opium has been most satisfactory, six cases out of 50 treated thus have had no recurrence for two-and-a-quarter years, and all the cases treated were severe cases of many years' duration, which had resisted all previous treatment. He begins with simple bromide treatment, and later, if there is no improvement, adds opium in increasing doses. If, however, the opium be used, the patient must be treated as one who is seriously ill, skilled nursing and the most careful medical attendance are essential to the treatment. (British Medical Journal Epitome, February 13, 1897.)

EPILEPTIC ATTACK, CONSCIOUSNESS DURING.

(By Dr. Bannister, *American Journal of Insanity*, January, 1897.) This writer holds that the epileptic discharge in the cerebrum may in some cases not involve at all, or to any extent, those organs or parts concerned in psychic function so as to seriously affect or to abolish consciousness ; that there may be states of epileptic double consciousness in which it cannot be said that the mental functioning in the abnormal condition is less perfect and complete than in the normal state ; that the post-epileptic (or pre-epileptic) outbreaks of violence, while attended with excessive irritability and loss of control, need not be accompanied by any greater impairment of consciousness than would naturally be caused by intense emotional disturbance in other conditions ; that there may be true or apparent automatism not attended with any loss of general consciousness ; and that, therefore, the definition of epilepsy which makes loss of consciousness an essential, is an arbitrary one, not supported on pathological or clinical data, either in the ordinary convulsive phase of the disease or in its psychic manifestations. (Glasgow Medical Journal, April, 1897.)

HYSTERIA.—A Permanent Symptom of.

From an examination of over fifty cases of hysteria, Strozevski (*La Médecine Moderne*, February 17, 1897, p. 108) has arrived at the conclusion that in this condition there is always an absence, or, at least, a marked diminution of the peculiar sensation caused by very lightly tickling (as with a small piece of paper or a hair) certain sensitive parts of the body, *e.g.*, the external auditory meatus and the mucous membrane of the nostrils ; the lower eyelid and the skin of the forehead. Less excitable parts are the axillæ, the skin over and under the knee and the sole of the foot. He has found this absence or diminution of the tickling sensation in every case without exception, and has not found it nearly so marked in any other disease. Ordinary sensation in the parts is normal. This symptom persists even after the cure of any striking hysterical manifestations which may have been present. Should this be found to be invariably the case, it may prove a most useful symptom in the diagnosis of doubtful cases of hysteria. So far we have only had an opportunity of testing it in two cases, and the result in these bore out Strozevski's conclusions. (Treatment, March 11, 1897.)

INFANTILE PARALYSIS EPIDEMIC.

Dr. W. Pasteur gave an account of an epidemic of infantile paralysis among children of the same family. Seven children were affected within the space of ten days. In all there were febrile manifestations with marked headache, which in three cases were followed by paralysis and in two by tremors, the latter being of short duration. One case was a typical one of infantile paralysis, another was of hemiplegic type and apparently of cerebral origin, while a third presented, in addition to a paralysis of spinal type, marked spasticity at the outset. It was, he thought, a matter of very great interest to consider what was the nature of these cases. It seemed clear that whatever their origin they were all casually connected with the primary fever, and that they were the result of the operation of some specific infective process. This certainly was not one of the eruptive fevers, nor was it diphtheria, and there was no influenza in the district, besides which the health of the parents had remained good, and the children themselves had shown no symptoms of catarrh. In view, then, of the fact that whatever these cases were they were the result of the same infective process, while one of them presented the usual features of infantile paralysis, it seemed to Dr. Pasteur that the morbid change was probably of the same nature as that which occurred in anterior poliomyelitis, but occupying different situations, in one case being located even above the level of the pons. They were, in fact, aberrant forms of infantile paralysis, and the

point of interest was, firstly, that such varied forms of nerve disorder could arise from the same cause, showing that infantile paralysis was not so strictly a system disease as some had imagined, and, secondly, that infantile paralysis was a specific infective malady. (The Hospital, April 3, 1897.)

INSANITY, ADOLESCENT.—Treatment of.

Treatment should consist in mental distraction during the acute and subacute stages, with muscular out-door labour and plenty of good nourishing foods. Clouston lays special stress in giving them abundance of nourishment, chiefly in the form of milk and eggs. The bowels require careful looking after, and tonic treatment is greatly needed. Iron tonics, &c., cod-liver oil and malt extract, are very useful if the stomach will bear them. Masturbation habits require looking after. Great cleanliness of the body is a great help here with good bowel action in the morning, aided if necessary with a teaspoonful of Epsom salts in one-third tumblerful of water before breakfast. The bromides, also, are very useful to allay sexual desires, and if hypochondriacal symptoms exist, the passage of a large-sized bougie occasionally will do good. When the acute symptoms pass away the social instincts of the patient require fostering, as this will be the best prophylactic in future. The disease, in my opinion, is one induced by self-living and self-exhaustion by bad habits and otherwise. If catarrh of the stomach be present, and the patient refuse food, lavage of the stomach will be necessary along with liquid foods, until the digestive power is restored. (From Dr. Maclachlan's paper in the Glasgow Medical Journal, February, 1897.)

MEGRIM.—Treatment of.

Dr. W. P. Herringham relates a case cured by abstinence from butcher's meat, and makes the following remarks :—This treatment of megrim by abstinence from butcher's meat, and if necessary from other articles of diet, was introduced by Dr. Haig several years ago. These migrainous symptoms are not alone. There are a considerable number of people, both men and women, usually of a nervous temperament and very often, like patients with megrim, of powers much above the average, who constantly complain not of pain, but of discomfort in the head. They have a sense of fulness, and even of "swimming" in the head ; they are unable to do mental work after luncheon, and they complain of a number of little things which one is very much inclined to treat with contempt. It is well worth while in such cases to try what abstinence from red meat will do for them. Most of them have already learnt to abstain from beer or wine, but if not they must be deprived of these

things too. It is not the primary digestion that is at fault. They do not usually have pain or flatulence, or a furred tongue. But, for some as yet undiscovered reason, while fish, fowl, milk, and the vegetable proteids are assimilated well, red meat is not. I have known several of these people entirely relieved from their symptoms by this treatment, and I have even known a person so treated recover the power to drink wine, which used at one time always to disagree. I should say, to avoid disappointment, that cure is not sudden in these cases, though it is rapid. An occasional recurrence at first of the headache or of the sense of discomfort must be expected. (St. Bartholomew's Hospital Gazette, April, 1897.)

MENINGITIS, SEROUS.

Quincke has reported (*Deut. Zeitschr f. Nervenheilkunde*, ix, 1896) ten additional cases in confirmation of his former views upon this affection. The symptoms are indicative of increased intracranial pressure. In some cases there is moderate fever, at least in the initial stages, but in others there is no rise of temperature at all. Headache is a constant symptom, and vomiting and vertigo are very common. There are often loss of memory, mental hebetude and stuporous conditions, with apopleciform seizures and periods of unconsciousness. The cases of sudden onset may begin with an apoplectic seizure or loss of consciousness. Motor inco-ordination, weakness, and even paralysis may supervene. Involvement of the motor cranial nerves is occasionally met with, and changes in the optic nerve in the nature of swelling, hyperæmia, venous enlargement, and optic neuritis of a low grade are common. These changes may lead to complete blindness. The pulse is often slow. In the majority of his cases, Quincke performed lumbar puncture, finding a marked increase of the intraspinal pressure, and a clear or slightly turbid fluid, of a low specific gravity, containing some albumin but no tubercle bacilli. This procedure often gave very marked relief. Recurrences are common. Two of the ten cases terminated fatally. The diagnosis is still difficult, the trouble being most often confused with tumour and purulent meningitis. The optic neuritis is less marked than in tumour, and the fever and spinal rigidity less than in purulent meningitis. Lumbar puncture may aid in excluding the latter. The cases do best under mercury, and lumbar puncture often gives temporary, if not permanent, relief. (From Dr. Knapp's abstract in the Boston Medical and Surgical Journal, February 4, 1897.)

MENINGITIS, SIMPLE.

Dr. J. Walter Carr read a paper on "Non-tuberculous posterior basic meningitis in infants," before the London Medical and

Chirurgical Society. The object of the paper was to show that there was a distinct form of meningitis, occurring almost exclusively in infants, which has not at present received adequate recognition, though described by Dr. Gee and Dr. Barlow in the St. Bartholomew's Hospital reports for 1878, under the title of "The cervical opisthotonos of infants"; that it mainly affects the posterior part of the base of the brain, is entirely independent of tuberculous disease, runs a subacute or chronic course with fairly characteristic symptoms by which it can be diagonised during life, and presents very constant and definite post-mortem appearances, although its actual causation remains at present unknown. Eleven cases observed by Dr. Carr were narrated in detail, and compared with those recorded by Dr. Gee and Dr. Barlow. The cases all terminated fatally, none in less than five weeks, while some patients lived for three months or even longer. At the necropsies (ten in number) inflammation of the pia-arachnoid was found over a very definite area at the base of the brain, hydrocephalus in all the cases, and in some closure of the openings between the fourth ventricle and the subarachnoid space. In no instance was any sign of tuberculous disease discovered, either in the cranial cavity or elsewhere. The possible causation of the ventricular effusion was considered in the paper, discussion on which was adjourned. (Medical Record, May 15, 1897.)

MENINGITIS, TUBERCULOUS.—Possible Recovery from.

One such case, a most convincing one, reported by Janssen about a year ago, is quoted by Collins in the article on "Meningitis" in the latest volume of the *Twentieth Century Practice.* In this case the patient presented typical symptoms of meningeal tuberculosis, but recovered under the administration of 900 grains a day of iodide of potassium. Three years later the patient died from pulmonary tuberculosis, and at the autopsy evidences were found in the meninges of previous tuberculous disease. More recently, W. Hale White reports a similar case in *Brain*, winter number, 1896. The patient was a boy, 13 months old, who was admitted to the hospital with a history of having had frequent attacks of convulsions during the previous two weeks, these having succeeded a prodromal period of vomiting after eating and fretfulness of a week's duration. The child lived only four days after admission to the hospital, presenting marked symptoms of meningitis. At the autopsy there was much recent basal meningitis. In each fissure of Sylvius about half an inch from its commencement was a caseous tuberculous nodule, the size of a very large pea. Both these nodules were in the meninges, and could be easily

freed from the brain. No other tuberculous deposit was found anywhere. Even if we are prepared to admit that meningitis is, in certain rare cases, capable of recovery, yet, as we have remarked, when the patient gets well there is always a certain element of doubt in the case. We think, therefore, with the author, that this case is worthy of record, "for the presence of two old caseous tuberculous nodules in the meninges, as well as recent acute inflammation of them, showed that there must have been some meningitis previous to that which killed the child, unless we believe that they represented an earlier stage of the same attack as that which was fatal, but the history seems too short for this explanation, for the caseous nodules looked as though they must be more than a month old." (From a leading article in the Medical Record, April 10, 1897.)

MOTOR DISTURBANCES TREATED BY CEREBRAL EXERCISE.

In 1896 Frenkel, of Paris (*Sem. Méd.*, March 25), published a detailed communication on what he called *exercice cérébral* in the treatment of certain forms of motor disturbances, and which consists in inducing the patient to perform a series of systematic movements with the muscles diseased. A. A. Kalinin (*Vratch*, No. 7, 1897) has used this method (in the clinic of Schtzerbaka at Warsaw) in five cases of tabes dorsalis, with the result of greatly improving the condition of the patients. He arrives at the following conclusions :—(1) By this treatment the loss of motion may be restored to a satisfactory degree, the gait and locomotion of the patient gradually becoming safer and firmer. (2) The sense of locality and that of movement are but little improved; the same may be said as regards skin sensibility. (3) What is very soon noticeable is the influence of this treatment on the so-called Romberg's symptom, which from the very commencement of the treatment becomes less pronounced, and appears much more rarely than before. (4) The duration of the treatment should entirely depend upon the progress and degree of the motor disturbances present, but in any case it should not amount to less than a month. (5) No ill effects were observed if the treatment was interrupted at short intervals from three to two weeks. This period, however, must not be exceeded. (British Medical Journal Epitome, March 27, 1897.)

MYELITIS, ACUTE.—Treatment of.

Retention of urine takes place, and the patient may first become aware of the fact that everything is not in order by the dribbling away of urine, the sequel to over distension. Such a condition is usually spoken of as "overflow incontinence." It is sometimes said that even in these cases cystitis does not occur except as a

result of infection by a dirty catheter. This, however, is not correct, for cystitis may occur in certain cases of acute myelitis even before a catheter is passed. Nevertheless it is of the utmost importance that extreme care should be exercised in regard to the condition of the catheter, and not only should the urine be drawn off, but the bladder should also be washed out by means of a solution of a mild antiseptic like boracic acid. After a time, if the case goes well, the bladder is likely to regain its power of contraction, so that it is able to empty itself wholly or, more usually, partially, not in obedience to the volition of the patient, but reflexly. Such a condition is spoken of as "reflex incontinence" to distinguish it from the overflow incontinence already alluded to as occurring earlier. Even in this condition it is desirable that the catheter should be passed at least twice in twenty-four hours, and also that the bladder should be washed out, for in probably every case it never empties itself completely. In the stage of complete retention, the catheter should be used once in every six or eight hours. It may be occasionally necessary to use it even more frequently. (From Dr. James Taylor's article in Treatment, 1897, p. 1.)

MYELITIS IN A CHOREIC CHILD FOLLOWING TREATMENT WITH ARSENIC.

At a recent meeting of the Société Médicale des Hôpitaux, Comby (*Presse Medicale*, 1896, No. 52, cclx.) reported the case of a girl, 7 years old, without rheumatic or cardiopathic antecedents, who came under observation about a week after the onset of a severe attack of chorea. Treatment was begun with the administration daily of the equivalent of $\frac{1}{7}$ grain of arsenious acid, the dose being increased daily $\frac{1}{14}$ grain, until it equalled $\frac{1}{2}$ grain, and then being reduced in the same manner to $\frac{1}{7}$ grain. In this way $3\frac{1}{2}$ grains of arsenious acid were given in the course of eleven days. After the fifth day the choreic movements ceased, and did not return. On the sixth day vomiting occurred, the tongue was coated and slight febrile movement set in. After ten or twelve days the gastric disturbance disappeared, and the patient left the hospital. In five weeks, however, she returned, having been paraplegic for a week. The general condition otherwise was quite good; from having been pale and emaciated the child had become ruddy and full. The paralysis of the lower extremities was complete and the reflexes were abolished, but sensibility was unaffected, and there was an absence of trophic disturbance. In spite of treatment with strychnia, faradization, and sulphurous baths, the paralysis ascended to the trunk and the upper extremities, although in less degree than in the lower. Subsequently there was for a period of ten days incontinence of urine and fæces. Finally

improvement set in, and progressed in the inverse order of the invasion; and in the course of rather more than a month had advanced to complete recovery. The symptoms in this case are attributed to a myelitis of arsenical origin. (Medical News, December 5, 1896.)

MYELITIS, INFECTIVE.

In a recent number of the *Neurologisches Centralblatt* there is an abstract of a paper on this subject by Babes and Varnali. The writers restrict the term "myelitis" to true inflammatory processes, involving the vessels and connective tissue, excluding sclerotic or degenerative changes, and this, of course, postulates a virus for infective myelitis. From a consideration of other cases and of five which they themselves observed, they consider that in such cases inflammation of bloodvessels is a necessary part of the process. Changes in the parenchyma of the spinal cord follow these changes in vessel. Especially do the toxin of the tubercle bacillus and the virus of syphilis cause such vascular changes. Micro-organisms, however, may without any affection of vessels penetrate the nerve cells or surround them, and gives rise to a peri-cellular inflammation in which the bloodvessels participate, as in hydrophobia, or in other cases, such as those of tetanus, the toxin may cause only alterations in the nerve cells. The paper is interesting and suggestive, especially in reference to the examination by cultures, &c., of the cords from cases of especially acute myelitis. (The Lancet, February 13, 1897.)

NERVE SUTURE.

(By A. J. Ochsner, Chicago). The following conclusions were supported by the author's experience in the treatment of eight tabulated cases :—(1) Every severed nerve should be sutured even after years. (2) The earlier the operation is performed the better. (3) If neither sensation nor motion is established after a year, the nerve should be again exposed, the cicatricial tissue removed, and the ends again sutured. (4) The ends should be clean cut, and should contain neither crushed tissue nor cicatricial tissue. (5) Tension must be avoided. (6) The wound must heal without suppuration to secure the best results. (7) Hemorrhage should be controlled perfectly to prevent intervening clot. (8) Carefully prepared catgut is the best suture material. (9) After suturing the ends, either direct or a "distance," it is well to stitch a fold of fascia over the united nerve-ends. (10) The extremity should be placed at rest. (11) The external incision should be ample. (12) Castor oil taken in large daily doses often relieves pain due to traumatic injuries of nerves. (Cleveland Medical Journal, November, 1896.)

NEURITIS, ACUTE ALCOHOLIC, IN A CHILD.

The case described occurred in a boy, aged 5, who was taken to hospital suffering from paralysis of both legs. Six weeks previously, when out walking, the child had fallen, and for two hours remained on the ground without the power of moving his legs. The same accident occurred repeatedly, till at last walking became an impossibility. At the same time pains of a very severe character developed in the limbs, which pains were greatly intensified by pressure over the muscles. There was paralysis and atrophy of the psoas, iliacus, extensors, and adductors of the thighs, and the gluteal muscles were also affected. Sensibility and the skin and tendon reflexes were normal. Under the influence of rest and electricity, the paralysis of the muscles completely disappeared, and the child left the hospital cured in six weeks. The case presented considerable difficulty in diagnosis, until it was discovered that the boy was the son of an innkeeper and was in the habit of consuming at least two litres of beer a day.—*Jahrb. f. Kinderh*, Leipzig, Bd. xxxvi. (Abstract in the Edinburgh Medical Journal, January, 1897.)

OPHTHALMOSCOPE IN THE DIAGNOSIS OF CEREBRAL DISEASES.

Its value has long been recognised, and its importance in determining the presence of cranial complications in middle-ear disease is not lost sight of by British surgeons. Pooley, however (*Medical Record*, August 15, 1896), in reviewing the subject, expresses the opinion that otologists do not pay sufficient attention to the eyes. That the brain or its membranes may be so seriously involved in disease as to cause death, and yet give rise to no discernible fundus change, is a fact we have all experienced ; but, on the other hand, if optic neuritis is discovered, we may consider that the diagnosis of intracranial extension is confirmed, even if the former be the only symptom. Also, as Pooley points out, if the optic neuritis disappears after operation an indication is afforded as to a similar improvement in the cerebral condition. The discovery of optic neuritis does not enable us to state the character or location of the disease. Pooley concludes, perhaps too dogmatically, (1) that when the disc is inflamed, or merely slightly œdematous in a case of chronic otorrhœa, there is sufficient indication for opening the mastoid ; and (2) that the question of exploring the cranial cavity can only be considered when the optic disturbances occur in conjunction with other symptoms. (The Practitioner, April, 1897.)

PARALYSIS AFTER ANÆSTHESIA.

As to treatment, prophylaxis should first attract our most serious attention. Pressure on special nerves should be avoided, and the arms should never be raised above the head, but so far as possible, rest in an easily flexed position on the chest. In using leg-holders the parts exposed to special pressure should be carefully padded with cotton-batting. The head should be supported on a pillow, and, if the patient vomits and the arm is raised, the head should be bent toward the arm and not away from it. As to paralysis of central origin, we can hardly take any prophylactic measures beyond abstaining as far as possible from operating on very old persons, and abridging the duration of the anæsthesia as much as possible. In this respect it is often preferable, if several operations are needed, to operate in two sittings rather than to keep the patient too long under ether. In regard to curative treatment, electricity occupies the first place; but since it has been found that its application shortly after the operation is very painful, it is advisable to wait about a week before having recourse to it. All my cases have responded nicely to faradisation. Krumm recommends to use galvanism and place the cathode on the point of lesion, and later to use labile and stabile electrisation both above and beneath the seat of the lesion. Besides electricity, massage and hydrotherapy are undoubtedly of some value. Among drugs strychnine is the most important, and may be given together with iron, quinine, arsenic, extract of red marrow, and a nourishing diet. (From Dr. Garrigues' paper in the American Journal of Medical Science, January, 1897.)

PARALYSIS, ETIOLOGY OF OBSTETRICAL.

Coming to the modification of Carter's theory, which I would suggest, the first point which is shown by dissecting the brachial plexus of a new-born infant, is the close apposition of the plexus to the sharp inner edge of the clavicle. It is also noted that the suprascapular, a very considerable nerve, leaves the plexus much higher up, and makes its way outwards and backwards to the suprascapular notch. This consideration has led me to believe that this nerve is independently stretched in the separation of the head from the shoulder, the distal point of fixation being either the suprascapular notch or the outer edge of the scapular spine, around which the nerve immediately passes, or perhaps both. That the latter point is of special importance would perhaps be shown by the fact that the muscle supplied below the spine of the scapular, namely, the infraspinatus and teres minor, appear to receive the brunt of the injury. I should agree with Oppenheim regarding the rôle of the clavicle pressing upon the plexus directly below Erb's

point, causing paralysis of the deltoid, biceps, and coracobrachialis, as well as of the more extensive arm paralysis sometimes present. (From Dr. G. L. Walton's paper in the Boston Medical and Surgical Journal, December 24, 1896.)

ROENTGEN RAYS.—Bullets in the Brain Revealed by.

Dr. Willy Meyer presented a patient whose case he intended to report more fully on another occasion. The young man had attempted suicide by shooting himself in the right temporal region. He was taken to a hospital, where he was trephined and the depressed bone was raised. Motor symptoms manifested themselves in the left arm and leg, pointing to an injury of the motor area in the right hemisphere. Dr. Meyer saw him and attempted to have X-ray photographs taken, and succeeded, by using both side and front exposure, in revealing three spots on a line with one another, one of them on the left side of the brain, two of them supposed to be a divided bullet or two bullets, and the third a splinter of bone. Possibly the third was also lead. Their removal was regarded as impracticable and nothing further was done. An interesting feature in the case was the falling out of the hair on the left posterior fourth of the head as a result of exposure to the X-ray. (Medical Record, February 6, 1897.)

SCIATICA.—Schott's Treatment of.

Borischpolski (*Neurol. Centralbl.*, December, 1896), adopting the view that sciatica is due to disturbance of the circulation, followed by accumulation of the products of metabolism in the affected nerve, has applied the Schott douches to 32 cases of sciatica. Of these cases 23 were cured, 7 were improved, and 2 remained in *statu quo*. The writer concludes that these douches are of real value in sciatica, a conclusion supported by Bechterew, who says that they are particularly useful in long-standing cases of sciatica. (British Medical Journal Epitome, March 6, 1897.)

SPINE.—Severe Injuries of, with Paralysis.

Dr. Pearce Bailey presented four patients illustrating severe injuries of the spine without fatal issue and with partial disappearance of symptoms subsequently; no operation. The first was a man, 40 years of age, who, some years ago, had sustained a heavy blow on the back, causing dislocation in the lower dorsal region, paraplegia, loss of sphincter control. Two years ago he was still unable to walk, but had since recovered power of locomotion, being able to go about on crutches. There was still dropfoot. He could retain his water for the most part. In the other three cases the injury was in the cervical region.

One was that of a man of 50, who had sustained a stab wound just below the axis, partly dividing the cord and causing motor paralysis on one side and sensory paralysis in a large degree on the other. The patient still had spastic paralysis, but was able to go about with a cane. The third was an old case, that of a man who had fallen from a wagon, striking the back of the head, causing unconsciousness and dislocation of the fifth cervical vertebra. He was unable to move the body, had no control over the rectum for a year; sensation had been markedly impaired, but had returned. The patient now had difficulty in getting about with crutches, and presented evidence of degeneration of both pyramidal tracts on both sides, with atrophy of hand muscles. The reflexes were exaggerated, as they were also in the other cases. The fourth case was that of a young man who had struck his head on diving from a height into shallow water, evidently causing hemorrhage in the upper cord. He did not lose consciousness, but lay abed three days, unable to move the limbs. He began to walk after four weeks. At present the right leg was normal; the left one was weak, and on walking showed spastic rigidity. The knee reflex was increased. There was some stiffness in the hands, most marked in the left hand; the little finger was nearly paralysed. The evidence was strongly in favour of a slight hemorrhage in the region of the first dorsal vertebra, chiefly on the left side. (Medical Record, May 1, 1897.)

SURGERY, CEREBRAL.

In a recent paper by Professor Hitzig, an abstract of which appears in the *Neurologisches Centralblatt*, an account is given of four cases of tumour of the brain in reference especially to the non-success of operation. The first case was that of a man, aged 34 years, who had received a blow from a hammer eight years before he came under observation. He had weakness and convulsive movements in the right arm, and, later, weakness of the right leg and headache, but no sickness or optic neuritis. He was thought to have a cortical tumour, but none was found at the operation, although there was evidence of increased intracranial pressure. Three weeks later there were papillitis and sickness and convulsive movements of both legs. He rapidly passed into an unconscious condition and died. A large sarcoma was found apparently commencing in the centrum ovale, thence spreading into the cortex and also the corpus callosum. The second case was that of a woman, 23 years of age, who had vomiting, giddiness, gradual failure of vision in the right eye and also in the left. There was internal strabismus first on the left and later on the right side. There were optic neuritis and slight spastic paralysis of the left extremities and weakness of

the right side of the face. It was supposed that there was a tumour in the cerebellum, but an operation did not confirm this. The patient afterwards died, and at the necropsy a large cystic glioma was found in the right frontal lobe, which had flattened out the optic nerves, the third, the sixth, and the fifth nerves, and had compressed the right half of the pons. The third case was that of another woman, 34 years of age, who had attacks affecting the right arm, beginning in the fingers and slightly affecting the head and the leg without loss of consciousness. There was rather laboured speech and slight right-sided weakness in the arm. Operation failed to reveal any tumour, and three years later her condition remained unchanged. The fourth case was that of a man who three years before had had an injury to the right side of the head, and who suffered from giddiness and increasingly severe headache, with subsequent right-sided paresis. This became permanent, and there were also right-side Jacksonian attacks commencing in the foot. There was tenderness on the left side of the head, and at the operation a large endothelioma was removed. This apparently grew from the dura mater, and covered a large area of the convexity of the hemisphere and compressed the central region and the gyrus fornicatus. Death followed from shock. (The Lancet, March 13, 1897.)

TABES AND OPTIC ATROPHY.

Dr. Pearce Bailey comes to the following conclusions :—(1) In about 75 per cent. of the cases of tabes in which optic atrophy is an early symptom some of the other tabetic symptoms may be late in appearing or may not develop at all. This is especially the case in respect to the lightning pains and the inco-ordination of movement. The loss of knee-jerk in such cases is very constant. (2) The most distressing symptoms may develop simultaneously with or immediately succeed the blindness. (3) The association with the optic atrophy of oculomotor palsies is without prognostic significance. (4) The subject will receive its best ellucidation by the observation, over long periods of time, of patients with "primary optic atrophy." (Medical Record, November 14, 1896.)

TABES AND SYPHILIS.

The *Montreal Medical Journal* gives the result of Storbeck's examination of 108 tabetics. Of these, 22 had certainly had syphilis; 63 had not; in 23 there was doubt. Adding one-half of these last he concludes that 30·5 per cent. of tabetics had suffered from syphilis. He regards the connection between the two diseases as unproved. Our contemporary mentions, in

illustration of the variability of statistics on this point, that Gowers stated that syphilis had preceded tabes in 70 to 80 per cent. of cases; Fourmin in 93; Westphal in 33. (Dublin Journal of Medical Science, May, 1897.)

TABES.—Treatment of.

(By Professor Erb.) The fundamental rule of successful treatment is to subject the patient to a prolonged anti-syphilitic cure during the first stages, for, statistics prove that the chances of developing tabes are twenty times greater in those who have not undergone specific treatment. Warm and vapour baths should be avoided. Influenza seems also to predispose to the development of locomotor ataxia in syphilitic subjects. In the controversy as to whether patients, who give a history of previous syphilis, should be treated specifically, the author considers it as indicated, six-sevenths of the cases showing decided improvement. The anti-syphilitic treatment is specially called for if there are concurrent specific lesions, or if the patient has never undergone an adequate cure. This treatment should not be prescribed in inveterate cases, in dyspeptic or cachetic subjects, in those who have been subjected to it repeatedly without any amelioration, and in patients showing intolerance for iodine or mercury. The old inunction-method with mercuric ointment is recommended, 4 to 6 grammes daily, and thirty to sixty rubbings; then the treatment is suspended for several months. The action of KI is less favourable. Tonics and a hygienic régime are also valuable, and if hydrotherapy is resorted to, the temperature of the water must never be higher than 30° C. Every effort must be made to improve the patient's nutrition, and all injurious substances and habits, such as alcohol, tobacco, sexual excesses, exposure, &c., should be avoided. Among drugs, argent. nitr. in doses of 0·03 to 0·5 with or without extract. nuc. vom. is the most useful; strychnine, by the mouth or hypodermically (0·002 to 0·008) has been used with benefit in appropriate cases. The following may also be of service:—Ergot, the bromides, and arsenic. There is as yet no positive proof of benefit being derived from organo-therapy (spermine, the glycero-phosphates). Electrotherapy is a valuable aid in treatment: the galvanic current along and across the spinal cord, galvanisations of the cervical sympathetic, positive pole applied over the cord in case of pain, and the negative pole along the crural and sciatic nerves. The surface of the dorsal electrodes must be 50 to 70 square ctms., the current of medium intensity, and the séances not too long. The electric (faradic) brush over the body and extremities is sometimes used. The effects of static electricity are uncertain. Counter irritations, 30 to 50 fine cautery points around the

vertical column, and blistering are at times beneficial. Among orthopœdic measures, massage and gymnastics may be given a trial. Nerve stretching is at present advocated by but few authorities, while suspension gives good results. Electricity, nervina, and local anæsthetics are employed for lancinating pains, and painful visceral crises, but morphine should, if possible, be omitted. Fraenkel has developed a method of muscular exercises which proves quite satisfactory. For vesical troubles, electricity; for tabetic arthropathy, rest and compressive dressings of iodine are ordered. Psychical treatment should also be borne in mind. (From Dr. Macalaster's Abstract in the Journal of Nervous and Mental Disease, January, 1897.)

TETANY IN CHILDHOOD.

Hauser, from a study of 280 children, comes to the following conclusion:—(1) There is a true tetany of childhood which follows the exact symptomatology of the tetany of adults, and presents, as the most marked symptom, the characteristic contractures of the extremities; in addition, there is always found one or the other, and frequently all the symptoms of the so-called *trias*. Aside from the tetanic spasm, the laryngeal and eclamptic spasms play an important, even a prognostic *rôle*. The etiology of infantile tetany is not yet clear. It is a fact of experience that tetany rarely attacks perfectly healthy children. Rickets seems to be an important predisposing cause. The direct exciting cause seems often to be gastro-enteric disturbances. This is shown by the frequent concurrence of tetany with acute dyspepsia. The tetany of childhood is a dangerous malady, frequently causing death. Its therapy can, in the present state of our knowledge, be a causal one only in those cases where more or less disturbance of digestion is present. These cases should be treated by a rapid emptying of the digestive tract by irrigation of the stomach and bowels, the administration of purgatives for the removal of the toxins, and to avoid their new formation the restriction of the diet to amylaceous food. In all other cases the treatment can only be a dietetic one. Symptomatically it resolves itself into the administration of narcotics (bromides, chloral hydrate, &c.), for the spasms. (2) Besides this form of tetany characterised by typical contractures of the extremities, there is a so-called latent form, occurring in infancy. Its diagnosis is based on an increased galvanic irritability of the nerves, which does not occur in this manner in any other disease; the same may be said of Trousseau's phenomenon, if present. A well-developed Chvostek's sign may support the diagnosis, but is not convincing in the absence of one of the other symptoms. (3) These cases of latent tetany frequently present as a prominent symptom

severe spasm of the glottis. All cases of spasm of the glottis, particularly those of a severe type, should stimulate us to look for tetanic symptoms, especially for Erb's and Trousseau's signs. (4) The greater number of all cases of spasm of the glottis have no connection etiologically with tetany ; moreover, some relation must exist between spasm of the glottis and rickets, which probably indicate more than a mere coincidence. (Pediatrics, April 15, 1897.)

TRAINING OF THE MENTALLY-DEFICIENT EPILEPTIC CHILD.

Often the parents are hard-working people, and have not the time to teach the epileptic child at home ; too often they find it too much trouble, and feel that any effort or money directed towards teaching them is an unnecessary waste of both. In many cases they send them to the almshouse and cast them off entirely from all considerate kindness and care. Such epileptic children are admitted to the Craig Colony, and demand so much done for them that only the colony system can adequately satisfy. The colony idea is to put them immediately under right training, give them constant employment in congenial lines of work, with slight changes of occupation, regular and wholesome diet, early hours, cheerful and healthful influences. They are made to recognise the fact that they are important factors in home making, and that the colony is to all purposes their home. There are no patients who need such tactful care as epileptic children. The right words can very often avoid a quarrel, and there is needed in this more than in any other charity, a rightly directed, broad-minded sympathy, as far as possible removed from all emotionalism. Epileptic children are very sensitive to a word or look, and morbidly suspicious. They learn application very slowly ; their tendency is to grasp ideas very superficially, both mentally and morally. It is only by persistent effort and tireless reiteration along right lines that any permanent superstructure can be erected among such a chaos of morbid mental impulses. One of the greatest difficulties encountered in caring for the mentally-deficient child is in making him realise the necessity of constant employment. Even after they have been taught to work fairly well they still need supervision and constant care. (From Dr. Elizabeth D. Holt's paper in Pediatrics, May 15, 1897.)

TREMOR, HEREDITARY.

Clinically, hereditary tremor possesses no characteristics, being subject to many individual variations. In some cases the tremor is slow, rhythmic and with slight excursions. In others it is rapid and less regular. It may be confined to the upper

extremities, which appear to be most frequently affected ; or it may involve these together with the head, eyes, tongue and vocal cords. The lower extremities appear to be less frequently involved. In the majority of cases it is absent when the patient is at rest, but in some cases it continues even during sleep. Excitement and excesses of every kind tend to increase it. It may develop gradually and increase progressively, or it may develop suddenly and remain stationary thereafter. The age at which the disease begins varies much. In my case it began at the age of 22 ; in the case of one of her sisters at about the same age, and in the younger sister during childhood. The age at which the disease first put in an appearance in the case of her father and in that of her paternal grandmother is indefinite, but it began rather early in life. Hereditary transmission is not always direct from parent to children, since one generation may be exempt and the following generation inherit the disease. In the absence of reports of autopsies we are not informed of the pathologic changes, if any exist, upon which this peculiar disease is based. The prognosis has been unfavourable with few exceptions. (From Dr. W. F. Wegge's paper in the Journal of the American Medical Association, January 30, 1897.)

TUMOUR, CEREBRAL.—Successful Removal of.

Dr. Washbourn and Mr. Arbuthnot Lane described the case of a woman, aged 46, who was seized with a fit on May 4, 1896. It commenced as a convulsive twitching of the thumb of the right hand. This extended to the forearm, and to the upper arm, the elbow being forcibly flexed. The leg on the same side was then similarly affected, the knee being bent. She did not lose consciousness. After the fit she noticed that her right arm and leg were weak, and that the right side of her lips and tongue were numb. During the interval that preceded her admission into Guy's Hospital, on August 27, 1896, she had a similar fit about every fortnight, the date of the fit corresponding to her menstrual periods, which were very frequent. She gave no history of headache or of vomiting. On admission her right side was found to be distinctly weaker than the left. During the time she was under observation she had fits similar in character to those already described. As she did not improve under anti-syphilitic remedies it was decided to explore the proper area of the brain on the left side. On September 19 a large area of bone was removed, and the dura mater, which was healthy, exposed. On the following day she had two fits. On September 21 the dura mater and arachnoid were divided, when a tumour was exposed. It grew from the pia meter, and deeply indented the brain immediately in front of the upper limit of

the fissure of Rolando. The tumour was sharply defined and shelled out readily. Though not invading the brain substance, a minute portion of grey matter was found adhering to its under surface. The longest diameter of the growth was from before backwards, where it measured about two inches, while its transverse measurement was about an inch and a half. Its depth appeared to equal its breadth. The convolutions depressed by it comprised the upper portion of the precentral gyrus, the adjacent area of the first frontal gyrus, with part of the second frontal gyrus, the marginal gyrus, and probably to some extent the gyrus fornicatus. Aphasia with paralysis of the right arm and of the right side of the face followed the operation. The aphasia soon disappeared. When she left the hospital, on January 24, 1897, she had complete motor paralysis of the right hand and forearm, with impaired sensation in the fingers. She had lost the pain in her arm which existed previous to the operation and which was temporarily increased by it. The facial paralysis had also disappeared. She had no recurrence of the fits after the removal of the tumour. At the present date, March 26, 1897, movement is returning in the fingers, but the rest of the arm is still paralysed. Dr. Buzzard remarked on the fact that iodide of potassium had only been given for a fortnight. Personally he would not have had the courage to recommend an operation until he had given it a longer trial in larger doses. Dr. Washbourn, in reply, admitted that the iodide was only given for a fortnight, but he pointed out that apart from the fact that not the slightest benefit accrued from its administration, there was not the least suspicion of any syphilitic taint. [There is no mention here of the nature of the tumour.] (Medical Press and Circular, March 31, 1897.)

TUMOUR, INTRACRANIAL.—Two Cases with Signs of: Recovery.

(Several cases resembling those of Dr. Clarke's have been mentioned in recent numbers of the *Retrospect*.—E. F. T.) With the exception of intracranial syphilitic disease, which is more amenable to treatment, and in which more or less complete recovery is frequently seen, the uniformly grave prognosis that attaches to cases of organic brain disease renders instances of recovery of great interest from the clinical point of view. That such recovery may occasionally take place where the symptoms indicated tuberculous meningitis has been shown by the accounts of published cases. Sometimes cases are also met with, and are perhaps of especial interest, in which, in the absence of syphilis, the symptoms point to the presence of an intracranial tumour, and yet the patients recover. Such seemed to be the conditions in the two cases which form the subject of this paper.

In each the prospect of recovery during the early part of the illness seemed, to say the least, extremely doubtful, and the favourable termination was all the more satisfactory. (The details of the cases have had to be omitted here.) When these patients were admitted, and during the first part of their stay in the hospital, although the symptoms were general and no localising symptoms were present, the most probable diagnosis seemed to be that of an intracranial tumour. In each case the general signs of tumour—that is, optic neuritis, intense headache, vomiting of cerebral type, and vertigo—were well marked, and in the second case there was inability to stand. From the point of view of the symptoms themselves, the most significant was the character of the optic neuritis, which was of that very intense kind that is most frequently found in association with tumour. (From Dr. Mitchell Clarke's paper in the British Medical Journal, February 6, 1897.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

ANGINA PECTORIS.—Treatment of Attack.

The treatment of the attack includes the use of nitrite of amyl in from three to five-drop doses, poured upon a handkerchief, or taken from a glass pearl in similar manner, and inhaled. The use of nitro-glycerine in 1-100 grain doses is of less rapid efficacy. It may be repeated once in three or four hours, or at even longer intervals. In a severe attack it may be given at half-hour intervals, but should be given guardedly. In some patients the effects of nitro-glycerine is immediate, in others very slow. Hypodermatic injections of morphine, with or without atropine, is often of great service. The use of ether or chloroform, with or without valerian internally, relieves moderate spasm, and is somewhat stimulating. Local counter-irritation —by issue, sinapism, or blister over the præcordium, or the actual cautery over the præcordium, or applied over the hepatic region in some cases, and the application of electricity, may be resorted to. Sometimes the local application of the hot water bag is of service. Exercises given with extreme caution have in my own hands sometimes given some relief to the acute symptoms. (Medical News, January 9, 1897.)

Angina Pectoris.—Treatment by Erythrol Tetranitrate.

Dr. E. G., aged 75, writes thus:—"Before taking the tetranitrate of erythrol at stated intervals I thought it would be instructive to ascertain by experiment the length of time the

agent would afford immunity from the seizures of angina. It was taken, therefore, only when attacks were imminent, as known by pain supervening in the sternum, elbows, and fingers, before the breathing had become distressed or the point of agony approached. Certainly in ten minutes I felt that the progress of the attack was arrested, and the interval of ease was more prolonged. I then determined upon taking it steadily, at about eight hours' interval, as a prophylactic. For three days there was immunity from attacks, although some weariness and oppression at the chest were wont to steal on after the lapse of six or seven hours from taking the tablets. I am now taking them four times in the twenty-four hours, and am sanguine enough to hope to keep the foe at bay altogether." The best form of administration is undoubtedly the tablet form. Erythrol tetranitrate, however, was not introduced to replace amyl nitrite and nitroglycerine in cutting short attacks which have developed, but only to replace them in preventing the onset of the attacks. That it is capable of doing this much better than nitroglycerine, the best drug we had hitherto had for this purpose, I think the preceding case conclusively proves. (From Dr. J. B. Bradbury's paper in the British Medical Journal, April 10, 1897.)

DIGITOXIN.

V. Starck (*Münch. med. Woch.*, January 26, 1897) draws attention to the disadvantages attending the use of the ordinary preparations of digitalis leaves. Merck has introduced a crystalline digitoxin which acts promptly, has no unpleasant by-effects, and lends itself easily to the requirements of dosage. Unverricht has administered this preparation per rectum, by the mouth, and subcutaneously. The author has used Merck's digitoxin in tablet form in fourteen cases of cardiac disease, namely, ten of valvular disease, one of fatty deposit on the heart, two of myocarditis, and one of arterio-sclerosis with renal complications. The tablets were well taken, and did not exercise any appreciable irritant effects on the stomach. The digitoxin was without effect in the case of fatty deposit on the heart, and of only passing benefit in one case of myocarditis, but of marked value in the second case of myocarditis. In the cases of valvular disease with severe disturbance of compensation the beneficial effects belonging to digitalis leaves appeared. The result was obtained on an average in about twelve hours. In the case of arterio-sclerosis a more distinct diuretic action was observed under digitoxin than digitalis infusion. In three cases digitoxin had to be given on subsequent occasions, and always with good results. In one case symptoms of digitalis intoxication arose after the digitoxin had been given during three

days, but these disappeared under camphor injections in four days' time. At the end of this time the cardiac symptoms were improved, notwithstanding the intoxication. The dose was here, perhaps, too large, as eight doses of $\frac{1}{4}$ mg. were given in the three days. Usually, the dose employed was $\frac{1}{4}$ mg. twice a day, ten such doses being sufficient. Wenzel and Unverricht have employed rather larger doses. Thus Merck's crystalline digitoxin may take the place of the usual preparation of digitalis leaves. The use of digitoxin requires much care, the pulse being especially watched. As to whether the addition to the digitoxin of other isolated and pure constituents of digitalis leaves would increase the therapeutic effect must be left to future investigations to determine. (British Medical Journal Epitome, February 20, 1897.)

HEART.—Acute Dilatation following Exertion.

Schott (*Berl. klin. Woch.*, March 22, 1897) showed in the Verein für Innere Medicin some skiagraphs of acute dilatation occurring in children of 12 to 14 years old. The position of the nipples was marked by little plates of lead attached with wax to the children's nipples before the skiagraphs were taken. The dilatation was most marked in the left ventricle. The children had been allowed to wrestle with each other until dyspnœa commenced, in some cases also wearing a belt, which compressed the abdominal blood-vessels. (British Medical Journal Epitome, April 24, 1897.)

HEART AND PERICARDIUM, WOUND OF.—Suture of Pericardium: Recovery.

H. Williams (*New York Med. Rec.*, March 27, 1897) believes the following to be the first case—successful or otherwise—recorded of suture of the pericardium:—J. C., aged 24 years, was admitted into Provident Hospital, Chicago, July 9, 1893, with a stab wound about one inch long, three-fourths of an inch to the left of the sternum, through and in the long axis of the fifth cartilage. At first the wound was regarded as a superficial one; but during the night there were such persistent hemorrhage, pain over the cardiac area, cough, and pronounced symptoms of shock that a re-examination was made on the following morning, which showed that the knife had penetrated the fifth cartilage far enough to wound the internal mammary vessels. The following operation was then performed:—The original wound was lengthened to the right as far as the middle of the sternum. A second incision was made from the centre of the first, and carried over the middle of the cartilage and fifth rib, about six inches in length. The sternum, cartilage, and about one inch of the fifth rib were exposed. The cartilage

of the fifth rib was separated at its junction with the sternum and at a point two and a half inches from the sternum and a quarter of an inch from its attachment to the rib. The inferior attachments of the incised portion were separated, leaving the superior ones in place. The incised piece was reflected upwards, making an opening about two inches long and one and a half inch in width, bringing the internal mammary vessels into view. These vessels were ligatured above and below. To secure additional room an incision was made in the fifth intercostal space. The heart and lung being depressed backwards, a small punctured wound of the heart was seen. This wound was about one-tenth of an inch in length, and was about half an inch to the right of the right coronary artery, between two of its lateral branches. The wound in the pericardium was about one and a quarter inch in length. There was no hemorrhage from the heart or pericardium. The wound in the pericardium was closed by a catcut suture; the parietal flap was replaced, and the wound dressed. The patient, notwithstanding a sharp attack of pericarditis and pleurisy, made a complete recovery. Three years afterwards he is reported as being well. (British Medical Journal Epitome, May 1, 1897.)

HEART DISEASE.—The Treatment of, with Special Reference to Mitral Regurgitation.

Dr. H. A. Hare states that the first and most important point in the vast majority of cases is rest, placing the patient flat on his back in bed, or at least in the reclining position, and, removing all unnecessary exercise, diminish the work of the heart to an extraordinary degree. When medicines are needed there is nothing better for the majority of cases than digitalis, given in doses of from 5 to 20 drops of the tincture night and morning with meals. This should be stopped every few days, or at least decreased in quantity, to allow the system to eliminate or distribute what remains of the earlier doses. If the urine decreases rather than increases in quantity, the cumulative action of digitalis must be looked for with increased diligence. If anæmia co-exists, iron and arsenic, particularly the latter, which seems to improve the nutrition of the heart-muscle, are necessary. In patients well advanced in years, with beginning atheromatous change in the blood-vessels, potassium or sodium iodide often proves exceedingly valuable. Residence during the winter months in a mild climate, where the peripheral blood-vessels will not be contracted by cold, and therefore will not increase the work of the heart by offering obstruction to the peripheral circulation, will be of much benefit. Venesection will frequently give relief if there be evidence of pulmonary congestion and labouring of the heart due to distension of the

right ventricle. A hypodermatic injection of morphine will often act with great advantage during a paroxysm of cardiac failure. When the action of the heart is exceedingly irregular and the organ is irritable, an ice-bag applied to the præcordium is sometimes valuable, but care should be taken that it does not give the patient cold. Warm baths designed to dilate the peripheral blood-vessels and to increase the action of the skin, and the daily use of massage, are valuable adjuncts to the treatment above outlined.—*The Medical Fortnightly*, 1897, *No.* 6, *p.* 155. (American Journal of Medical Science, May, 1897.)

MITRAL STENOSIS AND SUDDEN DEATH.

(By Dr. W. Osler, *Montreal Medical Journal*, March, 1897.) The author describes a typical case of mitral stenosis occurring in a girl of 20, in which sudden death was due to the formation of a firm, ball-like thrombus in the left auricle, which, lying loose in the cavity, blocked the funnel-shaped space leading to the mitral orifice. The various forms of thrombi met with in the chambers of the heart are given as follows :—(1) Globular thrombi, with subtrabecular ramifications, which are common in the auricular appendices and in the apices of the ventricles in cases of extreme dilatation. (2) Mural thrombi, usually laminated, which occur in the dilated auricle, particularly their appendices, in the ventricles in cases of fibrous myocarditis, and in aneurisms of the heart. (3) The pedunculated, polyp-like thrombus, a very rare form, met with usually in the auricles. (4) The ball thrombus, free in the auricle, which constitutes the rarest form of cardiac thrombus. (Dr. Kelynack's abstract in the Medical Chronicle, 1897, p. 434.)

MITRAL STENOSIS, LEFT AURICLE IN.

In a thesis of seventy-five pages, Samways (Paris, 1896) attempts to prove that in pure mitral stenosis compensation is maintained (in the majority of cases) by hypertrophy of the auricle, associated with a prolongation of the auricular systole, which continues during a part or all of the time during which the ventricle is expelling its contents. Good evidence of the fact that the auricle is able to bear the brunt of the valvular lesions Samways finds in the clinical fact that in cases of mitral stenosis with the "buttonhole" orifice, so long as the strength of the hypertrophied auricle is maintained, there is only the presystolic and not the systolic murmur audible. This prolongation of the auricular systole in mitral stenosis Samways does not claim to prove, but considers it highly probable, in view of the work of Roy and Adami and Potain, who state that the auricular

systole lasts during the preparatory or mitral phase of the ventricular systole in a normal heart. The added clinical fact that in well-compensated mitral stenosis the murmur precedes the valvular tone heard at the apex during the systole, and also that the first phase of the apex-excursion is accompanied by the presystolic murmur, makes it seem probable that the auricle maintains its contraction during a large portion of the time occupied by the systole of the ventricle. Furthermore, when dilatation of the auricle supervenes compensation is broken, and a systolic as well as a presystolic murmur is heard. The systolic murmur heard at the heart's apex in mitral stenosis may, in some cases, be from the tricuspid orifice, as the hypertrophied and dilated right heart may form the apex of the heart. (From abstract in American Journal of Medical Science, January, 1897.)

MYOCARDIUM, GUMMA OF.

Dr. J. B. Herrick showed such a specimen before the Chicago Pathological Society. According to the author the effects of gummata of the myocardium were (1) weakening of the wall, with perhaps aneurism or rupture; (2) obstruction of a cardiac orifice by pressure; or (3) interference with the valvular mechanism by involvement of the valves themselves or by deformity of papillary muscle or chorda tendinea; (4) the breaking down of the gumma, discharge of contents into the circulation with emboli in distant organs; (5) from pressure upon, or involvement of, cardiac nerves, vessels or muscle, marked interference with performance of function as shown in palpitation, arythmia, dyspnœa, angina. Sudden death was common in gumma of the heart. (Journal of American Medical Association, April 16, 1897.)

PERICARDITIS AND ENDOCARDITIS IN GONORRHŒAL RHEUMATISM.

Dr. Limont showed, before the Northumberland and Durham Medical Society, a man recovering from an acute illness resembling rheumatic fever. Both wrists, both elbows, both ankles, and both knees were the joints most affected. On admission he had a very high temperature and a gonorrhœal discharge. Salicylates had not relieved him, and no medicine had materially benefited him. After his admission he developed pericarditis and endocarditis, from which he nearly died. The affected joints were still swollen and deformed. The swelling was chiefly external to his joint. There was marked muscular atrophy in the affected limbs. (Medical Press and Circular, December 30, 1896.)

PERICARDITIS, PURULENT.—Surgical Treatment of.

Dr. John B. Roberts, of Philadelphia, read this paper before the American Surgical Association. He advocated, as he had since 1876, the treatment of pericardial effusions in the same manner as pleural effusions, and stated that parcentesis was insufficient to cure suppurative pericarditis. Incision and drainage were essential, and should be adopted as soon as the diagnosis of pus in the pericardium was made. The diagnosis of the purulent character of the effusion was only determinable by exploratory puncture. This should be done at the upper part of the left xiphoid fossa, close to the top of the angle between the seventh cartilage and the xiphoid cartilage. Pericardiotomy should then be done after resection of the fourth and fifth costal cartilage in the manner described by the author. The operation was believed to be novel in some of its details, though others have recommended and operated upon by various forms of resection. This method was devised to avoid injury of the left pleura, which is nearly always a complication in the ordinary methods of puncturing or incising the pericardium. As a rule, empyema is liable to occur as a sequel of pericardio-puncture or incision in suppurative pericarditis. The prognosis is good in pericardiotomy for pyopericardium. In a table of twenty-six collected cases, ten recoveries and sixteen deaths were shown. This gave a percentage of recovery of 38·44 per cent. Of the fatal cases, at least nine were septic, and all the others which died had complicating lesions, such as pleuritis, pulmonary, cardiac, or renal lesions. The operation devised by Dr. Roberts consisted in raising a trap-door of the fourth and fifth costal cartilages and connecting soft parts and using the tissues of the third interspace as a hinge. The internal mammary vessels and left pleura are thus exposed and pushed to the left. (Medical News, May 8, 1897.)

PERICARDIUM, ADHERENT.

Although there is nothing to say about the treatment of adherent pericardium, a word may be hazarded about that of pericarditis so far as concerns the dilatation of the heart upon which the gravity of adhesion depends. The best authorities are agreed that in the acute stage of pericarditis digitalis is worse than useless, but it does not follow that the heart will not respond to a simpler stimulus. Gaskell, in his classical experiments upon the tonicity of the heart and arteries, found that minute quantities of alkali produce a tonic contraction of normal cardiac muscle indistinguishable from that which occurs with digitalin, and it would seem that this discovery is not without its clinical application. I have

watched many cases of pericarditis under alkaline treatment given for a different purpose, and have often observed the heart's action to become calmer and more efficient, and a mitral regurgitant murmur, probably of dynamic more than of organic origin, to disappear. (From Dr. Lee Dickinson's paper in the American Journal of Medical Science, December, 1896.)

STROPHANTHUS.

We may say that success in the administration of strophanthus requires :—(1) an active, well-made preparation from a reliable source. (2) Avoidance of its use in fully or over-compensated hearts, in those which present advanced muscular degeneration or mechanical defects of high degree. (3) The use of not too large or too frequently repeated doses. From my own observations, the dose of five drops of a reliable tincture three or possibly four times a day is sufficient. I believe that, considering the limitations just enumerated, strophanthus is the drug of choice in :—(1) All cases in which we wish to establish compensation. (2) All cases of arterial degeneration in which a remedy which causes more energetic cardiac contractions is required. (3) All cases of cardiac disease where diuresis is necessary. (4) All cases of weak or irritable hearts. (5) All cases of cardiac disease in childhood or old age. (From Dr. Wilcox's paper in the American Journal of Medical Science, May, 1897.)

TACHYCARDIA, PAROXYSMAL.—Treatment of.

The treatment most commonly adopted is that by digitalis, and it is certainly that which can most plausibly be recommended. Many praise it highly; others have found it fail. Some have given morphia with good effect. Oliver recommends belladonna. I must confess myself somewhat sceptical of the value of any drug in the fit itself, for this tends naturally to recovery, and that so irregularly that it is harder here than in most diseases to test the action of a drug. On the other hand, patients who have seemed to respond to digitalis at one time have altogether failed to do so at another, and have died in spite of it. Yet in default of other indications I think digitalis should be given, and in a few large doses. Pressure on the vagus should always be tried, for, though it seldom succeeds, it is quick and easy of use. Pressure upon the thorax should also be applied. Rosenfeld's way of doing it is to make the patient squeeze his own arms and elbows into his sides, and at the same time forcibly to compress his abdomen. He says that he had tried it in four cases, and that it succeeded in all. I am much more hopeful of some mechanical means such as this than of any drug in the fit itself, though I did not know of it when I had my own case under observation. The pain which

sometimes accompanies the tachycardia will yield to ice laid upon the heart, or to a hypodermic injection of morphia. In some cases the attacks can undoubtedly be reduced in number, or even stopped, by strict attention to the digestion ; and others seemed to be caused by overwork, or by an abuse of one of the four physical consolations of overworked persons—tea, coffee, tobacco, and alcohol. If by good luck the fits are amenable to pressure on the vagus or other mechanical means, they should always be at once cut short. By persistently doing this, Bensen's case was at last cured. Cases brought on by slight effort, especially in young persons, do not seem to admit of prevention. (From Dr. W. P. Herringham's article in the Edinburgh Medical Journal, April, 1897.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

ADENOID VEGETATIONS.

I will state what seems to me the most rational line of treatment to follow :—(1) If the child is one in whom you would not anyhow remove the tonsils without an anæsthetic, then, if any adenoid growths are present, remove these after you have excised the tonsils. (2) If there are only a very few adenoids present and the tonsils are large, and if you think you could conveniently remove the tonsils without using an anæsthetic, then do tonsillotomy only. (3) With regard to hypertrophic rhinitis, it is the practice of some surgeons to scrape the inside of the nose, especially the inferior turbinate bone, as a routine practice, at the time of removing the adenoids. This does not seem to me at all advisable ; there is quite enough raw surface already. In the majority of the cases, when the adenoids have been removed, the rhinitis will disappear. In those few cases where it does not, a subsequent operation can be done. I am quite convinced, from my own experience, that a second operation for the removal of adenoids has not infrequently been done, because a few growths have been detected when, what was really needed, was the actual cautery or its equivalent over the inferior turbinate bone, or the putting straight of a deviated septum. (From Dr. Ralph H. Crowley's article in Pediatrics, May 1, 1897.)

BRONCHITIS, CHRONIC.—Treatment of.

In the Hunterian Society Dr. Davies alluded to the many drugs which had been employed in the treatment of this disease, but he now emphasised the value of the spray method. This is carried out by frequent administrations of ipecacuanha wine,

three to four times a day. At each sitting half to one drachm of the drug is used, but the patient is directed not to swallow the wine. Successful cases were quoted. These cases showed relief from difficulty of breathing and lessening of the expectoration. The disadvantages of the inhalations were that sometimes vomiting followed, and if the drug were used pure spasmodic dyspnœa would sometimes come on, and it was not suited for cases of asthma. Dr. Davies had tried a spray of potassium iodide with encouraging results. The class of cases suitable for treatment with the ipecacuanha spray were early cases with much dyspnœa and tenacious sputa. Dr. Davies had also found much help from the administration of trinitrine, the dyspnœa especially being relieved. When the dyspnœa is moderate, tar in various forms is found useful. Terebene also falls in the same category. When fœtid bronchitis and bronchiectasis were present inhalations of creosote, as pointed out by Dr. Chaplin last year, had been found efficacious. (Med. Press, Dec. 9, 1896.)

BRONCHITIS.—Treatment by Hydrastis Canadensis. In the *Centralblatt für innere Medicin* for May 1, Dr. M. Saenger, of Magdeburg, gives his impressions of hydrastis as a remedy for bronchial catarrh. Dr. Saenger has used hydrastis in a great number of cases of bronchitis. He found that in the initial stage of acute bronchial catarrh it was quite ineffectual, but that in the subsequent course of the disease it was beneficial, especially if the course was protracted, and the sputa had lost their purely mucous character, and assumed a muco-purulent aspect. He found the remedy particularly efficacious in chronic bronchitis, for it mitigated the cough strikingly, facilitated expectoration, changed the muco-purulent character of the sputa to a more mucous one, and decidedly diminished the physical signs. As compared with opium and its derivatives, says Dr. Saenger, if hydrastis is not quite so prompt in its action in checking the cough, it is more enduring, and its final effect is greater, for it acts upon the cause of the cough, producing a more or less complete disappearance of the catarrh. As an expectorant it is at least equal to the other expectorants and solvents that are in use. So far as can be judged from physical exploration of the chest and from examination of the sputa, it far excels the other anticatarrhal drugs in use. He states that he could not do without hydrastis now in the treatment of bronchial catarrh, acute as well as chronic, for it enables him to dispense with the use of opium and its derivatives almost entirely in the treatment of tuberculous subjects. He has employed it in the form of the fluid extract almost exclusively. To adults he gives 20, 25, or 30 drops four times a day, in a little sweetened water. In case it does not produce the expected

effects, larger doses may be used. He has not found hydrastinine so trustworthy as the fluid extract. He has never observed dangerous or unpleasant effects from the doses of the fluid extract mentioned, but he remarks that very large doses may give rise to angina pectoris in the subjects of heart disease and in very debilitated persons. (From a leading article in the New York Medical Journal, May 15, 1897.)

EMPYEMA.—Treatment by a Valvular Tube.

Dr. W. Menzies Hutton (*Lancet*, London, February 6, 1897, p. 375) uses a valved tube for draining the pleural cavity after incision in empyema with the object of preventing the falling in of the chest-wall and diminished expansion of the lung. He points out that with an opening in the chest-wall the respiratory movements of the collapsed lung are reversed. During inspiration air rushes through the opening and causes still further collapse of the lung. If, however, a valved tube is used, both air and discharge are expelled with expiration, but with inspiration the valve closes and no air gets back into the pleural sac, and the lung remains so far expanded and is ready to expand still more with each expiratory act. Cases treated with such a tube are given, illustrating the success of the procedure. (From abstract in Treatment, April 22, 1897.)

HÆMOPTYSIS.—Treatment of.

Capitan (*Méd. Moderne*, August 26, 1896) does not regard hamamelis as of great value in hæmoptysis, but if it is used the fluid extract may be given in the dose of from 50 to 80 drops a day. Digitalis is necessary where there is in association with the hæmoptysis marked evidence of cardiac failure; ordinarily, however, it is best not to employ it. Morphine is valuable because it quiets the heart and allays activity of the cerebral centres, so reducing blood-pressure; it is a very useful drug to associate with ergotin, and may be given in the dose of one-eighth to one-fourth of a grain hypodermically. Similarly, Capitan thinks, as did Brown-Séquard, it is often useful to combine with the ergotin and opium some atropine. In those cases where there is marked excitation of the arterial system, full doses of ipecac, sufficient to produce slight nausea, or tartar emetic, do good by reducing blood-pressure. In the way of revulsions and derivatives, active rubbing, or vesication, or the application of hot cloths or hot-water bags to the perineum, or ice in a small ice-bag to the chest, may be employed. If the hemorrhage is sufficiently profuse to produce fainting, tight bandaging of the extremities is advisable. It is also claimed by some persons that where there is a slow persistent hemorrhage from the lung the use of an active purgative is

useful, in that it draws the blood away from the affected part. Above all, it is necessary that the patient should be kept quiet. Whether much good is obtained from the administration of such vegetable astringents as tannin and gallic acid, is doubtful. Turpentine, however, in the dose of five to ten drops, sometimes seems of value. (Therapeutic Gazette, February 15, 1897.)

LARYNGEAL TUBERCULOSIS.—Treatment of.

In an article in the *Cincinnati Lancet-Clinic* of December 5, 1896, S. E. Allen states that although a large per cent. of our cases of laryngeal tuberculosis cannot be cured, all can be alleviated, and treatment must have in view the desire to alleviate if a cure cannot be brought about. We must not abolish therapeutic methods, even if a cure is out of the question. The local measures can be classified into:—Simple antiseptic, non-irritant applications; more active germ and tissue-destroying agents, including lactic acid applications; the use of electrolysis and the galvano-cautery; and, lastly, excision of diseased tissue with curette or cutting forceps. Among non-irritant, simple applications the best are menthol inhalations, iodol and iodoform insufflations, and pyoktanin applications. In cases of slight severity, with the best hygienic treatment, these remedies often suffice to bring about a cure. Lactic acid is properly considered the best remedy for promoting the healing of tubercular ulceration, and is applied in strengths varying from 20 per cent. up to the pure acid. Lactic acid probably has more cures to its credit than any other remedy. In all cases where we have a tubercular infiltration without ulceration, or where the ulcer is deep, the lactic acid cannot be expected to exercise the healing action which it has on superficial ulcerations, and it is here that surgical procedures must precede its application. Since the introduction of ordinary surgical methods tubercular laryngitis has to a certain extent ceased to be the hopeless, terrible affliction of former years. Up to the year 1883 it was thought that tubercular destruction in the larynx never cicatrised, that such a thing as a cure was impossible. In that year Krause demonstrated on a post-mortem specimen cicatrices he had brought about with lactic acid; the desire to get the lactic acid solution on to the seat of the trouble led to curettement and removal of the infiltration. Excision of tubercular masses and curettement of ulcerated surfaces is, in selected cases, a procedure that cannot be recommended too highly. This, with the subsequent application of lactic acid, has often a wonderful effect. (Therapeutic Gazette, March 15, 1897.)

[Some will undoubtedly think that Dr. Allen's views are unfortunately enough too hopeful.—E.F.T.]

LARYNX, CANCER OF THE.

Professor Störk (*Engl. Med. Press*, December 25, 1896) concludes that all statistics are valueless. The diagnosis of the disease should be made early, when the trouble is still within the limits of the cricoid and thyroid cartilages. In advanced cases the glands of the neck are affected, and in these operation had no object. The artificial larynx is not a good substitute, as the patient cannot breathe with it, and he would rather be aphonic than have his respiration interfered with. B. Fraenkel states that as long as we treat the sick we must operate, even if the disease attacks the œsophagus. The chances must be placed before the patient and the latter must decide. In extreme cases he removes the entire larynx, without regard to the pharynx. The trachea is sutured to the skin and the other cavity is closed, so that only a passage for the food is left. Semon remarks that all cases of chronic hoarseness should be examined by experts, as cancer of the larynx was permanently curable so long as it was limited to the vocal cords. Sixty-six per cent. of his cases had recovered. (From abstract in Laryngoscope, January, 1897.)

PLEURISY, TUBERCULOUS.

The important practical outcome of the view that idiopathic pleurisies are tuberculous is that great care should be taken in such cases to re-establish the general health. Tuberculosis of the serous membranes is much more likely to be completely recovered from than tuberculosis of the internal organs, but there is considerable danger of pulmonary phthisis developing. It would be well in such cases, where it is possible, for the patient to winter abroad for a year or two. As regards life insurance, no case where pleurisy with effusion has occurred within the last few years should be accepted. After recovery from the pleurisy it might be worth while, if the patient is willing, to test him with tuberculin. A negative result would always be encouraging. (From Dr. Hector Mackenzie's review abstract in the Practitioner, April, 1897.)

PNEUMONIA, ACUTE.—Treatment with Anti-pneumonic Serum.

Mr. C. J. Harnett, M.B., records a successful case under Dr. Washbourn's care, and makes the following remarks :—The age of the patient (39), his intemperate habits, and his obesity combined to make him a very bad subject for pneumonia. That the attack was a severe one was shown by his general condition—at one time the pulse was scarcely perceptible—and by the fact that practically the whole of the left lung was involved. Before the first injection of antitoxin the pulse was 140, and some hours later he was so ill that he appeared to be

dying. The case was looked upon at one time as hopeless, and it would appear that the treatment was influential in bringing about his recovery. The injections were followed in each instance by a fall of temperature. (British Medical Journal, May 22, 1897.)

PNEUMONIA AFTER ANÆSTHETICS.

Dr. Silk introduced a discussion before the Society of Anæsthetics on this subject. He dealt with the subject under three heads :—(1) The relative frequency of these pneumonic troubles; transitory bronchial irritation was not referred to, but marked pneumonia with definite signs. In pre-anæsthetic and pre-antiseptic days pneumonia was a frequent cause of death in surgical cases, but, according to records of 5,000 cases published in hospital reports for 1894 and 1895 only 13 cases of pneumonia were referred to, and of these all but one were more or less of a septic nature. Prescott, of Boston, in 40,000 cases of etherisation found only three cases of typical pneumonia. (2) Possible explanations of their occurrence : The bacillus of bronchitis had not yet been discovered, and one of the three micro-organisms credited with causing pneumonia was often found in the normal buccal *débris*. (3) To what extent could they be referred—either to the anæsthetic used or the apparatus employed ? Experiments carried out on anthrax spores, cholera, tubercle, and typhoid bacilli with different anæsthetic agents showed in many cases rapid and permanently fatal results. Nitrous oxide—the mildest of all anæsthetics, both from an anæsthetist's and bacteriologist's point of view—which was used probably more frequently than all the others put together, and under conditions which would be most likely to convey infection, except when a foreign body had slipped into the trachea, had never, to his knowledge, been followed by anything approaching pneumonia. Dr. Silk mentioned several improvements in apparatus introduced of late years to facilitate cleaning. (British Medical Journal, April 17, 1897.)

PNEUMONIA, LOBULAR.—Etiology of.

Dr. Kreibich, in a monograph published by Braumuller, Vienna, 1896, examined 27 cases of pneumonia, 20 of which were of the inspiration variety. In 23 cases he found the diplococcus pneumoniæ, 11 times in pure culture, 5 times with bacillus coli communis, 4 times with staphylococcus pyogenes aureus, once each with bacillus pneumoniæ, streptococcus poygenes, and another unrecognised micro-organism. Dr. Kreibich asserts that broncho-pneumonia, and especially inspiration pneumonia, are generally caused by the diplococcus pneumoniæ ; but he notes that in man bacillus coli is also capable of causing lobar

and lobular pneumonia. As an auto-infection from the cavity of the mouth, the occurrence of lobular pneumonia dependent upon the diplococcus pneumoniæ is favoured by such conditions as heart failure, hypostatic hyperæmia, &c. In most cases of coli pneumonia there is infection by the blood from the intestine or from inflammatory processes in the urogenital tract. Inspiration pneumonia may end in suppuration, in gangrene, or in induration. With regard to the first termination, the variety of exudation is not generally influenced by the question whether the diplococcus was alone present or in company with other organisms, though the exudation has a tendency to be bloody if large infective masses are suddenly inspired. Gangrene is generally caused by anærobes and saphrophytes, probably present in the inspired mass, which induce putrid changes in the contents of the bronchi, and by their katabolic products lead to necrosis of the inflamed portions of the lung. Induration apparently occurs when the metabolic products of the bacteria constitute a long-continued stimulus to productive inflammation. (Medical Record, December 5, 1896.)

PNEUMONIC PATIENTS.—The Management of.

(By Dr. Simon Baruch, *Medical News*, N.Y., January 2, 1897.) Complete rest of mind and body and good nursing are essential. The ventilation of the sick-room must be anxiously watched by the physician. The diet may be restricted to milk and farinaceous broths (2 to 8 ozs. every two hours). Baruch uses but few drugs; quinine, digitalis, &c., he has discarded. He gives one dose of 10 to 20 grs. of calomel placed on the tongue and allowed to mix with the saliva at the commencement. He employs strychnine in hypodermic injections of $\frac{1}{30}$ to $\frac{1}{10}$ gr. every three or four hours for heart failure, and an occasional dose of morphine if required for pain. An occasional dose of phenacetin, when the patient is restless with high temperature, he considers unobjectionable; but it should not become a routine practice for temperature reduction. Baruch has a high opinion of the value of baths for children and wet compresses for adults. For children the bath is administered alongside the bed as in typhoid fever. Beginning with 95 deg. F. each bath may be reduced a few degrees until the patient becomes accustomed to it, repeating every four hours until the temperature remains below 102·5 deg. The bath temperature should rarely be below 85 deg. F., the patient should remain in it from eight to ten minutes, and friction after the bath is required to prevent chilling. Buxbaum (*Bl. f. klin. Hydrother.*, August, 1896), who also strongly advocates the use of baths in the pneumonia of children, prefers a temperature of from 64 deg. to 72 deg. F. He also insists on the necessity for friction. For adults Baruch

prefers the wet compress, rung out of water at 60 deg. F., wrapped round the chest and covered with flannel. It should be changed every half hour if the patient's temperature is over 102·5 deg., every hour if the temperature is below this. It should be discontinued when the temperature falls to 99·5 deg. F. Baruch believes that the wet compress stimulates and invigorates the nerve centres, prevents heart failure, reduces temperature, and assists the elimination of toxins. The antitoxic-eliminating effect is increased by copious libations of water. [*Note.*—There are one or two points in the above article which are worthy of more general attention. Popular prejudice in this country, as in America, renders it difficult to obtain free ventilation of the sick-room in cases of pneumonia, and yet fresh air is most important to the patient. I rarely see a case of pneumonia without having to draw attention to the want of ventilation of the sick-room. Prejudice also denies the patient a drink of water, however parched he may be. I have seen most marked improvement in symptoms—dyspnœa, restlessness, &c., from the bath in acute lobar pneumonia in childhood. To commence the treatment of acute diseases with calomel seems to me to be a mistake.—J. E. S.] (From Dr. Gustave Schorstein's abstract in Treatment, 1897, p. 89.)

ROENTGEN RAYS IN THE DIAGNOSIS OF CHEST DISEASE.

This application of the rays at first presented considerable difficulty. Bouchard (*Gaz. des Hôp.*, 1896, pp. 1408 and 1439; and 1897, p. 1) has now, among others, succeeded in demonstrating its usefulness. Dulness on percussion is found to go with opacity to the rays. Pleural effusions partly arrest the rays, so that the side affected by an effusion contrasts by its darker hue with the transparency of the healthy side. A deposit of tubercle at the apex gives rise to a darkish shadow on the screen. Cavities appear as lighter spots surrounded by shadow. The persistence of opacity at the apex as a pleural effusion becomes absorbed and the level of the resulting opacity becomes lower speaks for the presence of tubercle. Sometimes the radioscope reveals the existence of disease previously overlooked, and Bouchard mentions a case in point where towards one base the tint was slightly and unequally obscured. Auscultation then revealed the presence of friction in this situation. When the whole of one side is dark one has to deal either with a pleural effusion or with consolidation of lung. The position of the mediastinum will help to distinguish the two. Aneurisms can be seen in the same way. Bouchard mentions a case which was brought to him on account of the presence of a pulsating area to the right of the sternum. The radioscope, however

showed the absence of the heart on the left side, and it appeared that it was a case of cardiac transposition.

Prof. Bergonié (*Gaz. des Hôp.*, 1897, p. 11) confirms Bouchard's observations. He, too, is greatly struck with the complete accord between the radioscopic appearances and the results of percussion. To a zone of dulness has always corresponded a more or less complete zone of opacity. He mentions a case of hydatid cyst as showing the usefulness of the rays. An opaque zone was to be seen invading the left side of the thorax, leaving a thin transparent band at the side of the vertebral column at the apex and at the external border. The opacity of the shadow, when seen from behind, and its well-defined border, showed that it was seated nearer the posterior than the anterior surface. There is no doubt that in difficult and obscure cases of intrathoracic disease great help in diagnosis may in future be derived from the use of the Roentgen rays. (Dr. Hector Mackenzie's abstract in the Practitioner, April, 1897.)

SERUM (MARAGLIANO) IN PULMONARY PHTHISIS.

A correspondent of the London *Lancet* writes from Rome that the Maragliano serum promises as good results in the treatment of pulmonary phthisis as antitoxin has given in the treatment of diphtheria. Because of the nature of tuberculosis the antitoxin can never assert its power so rapidly and decisively as in diphtheria. Dr. Maragliano has had most success in private practice, because in such cases the patient usually consults a physician in good time and has the comforts and careful attendance of home; in hospital practice the patient is usually far gone in the disease, his strength has been sapped by pyrexia or hæmoptysis, and his resisting power is low through malnutrition. Even in these cases Dr. Maragliano has had most encouraging success. His followers of the Neapolitan school, though slow to adopt this treatment, have not been less successful, and Dr. De Renzi, the dean of Italian clinicians, announces that he has had 40 cases of cure by the Maragliano serum in his wards and equally gratifying results in private practice. He advises one not to despair even though 200 injections have failed to produce the desired effect. He observed that improvement was noticeable even in the most intractable cases, and one need only suspend the treatment for a short time to witness the rapid exacerbation of all the symptoms, and hastily to resume the injections. Dr. De Renzi has inoculated phthisical patients with 5 milligrams of Koch's tuberculin, and has obtained a strong reaction; but applying the same treatment to patients already under the Maragliano treatment the reaction was less marked, showing that they had been immunised against the "protein

tubercolari." In proportion as he increased the number of injections of the Maragliano serum he augmented the immunity against the tuberculous poison, until after 30 or 40 injections the reaction to the same dose of tuberculin was scarcely appreciable. According to Dr. De Renzi's opinion there is no remedy for phthisis equal to the Maragliano serum; it seldom fails to relieve, and, if applied in time and persevered in, it almost invariably effects a cure. (Medical Record, April 17, 1897.)

TOBACCO-POISONING.—A Respiratory Symptom of. Dr. W. S. Morrow, in a paper (before the Montreal Medico-Chirurgical Society) described a peculiar form of breathing which he had observed in a number of cases of tobacco-poisoning. He read reports of the three most typical cases he had seen. The symptom referred to consisted of audible deep inspirations occurring at intervals, and often accompanied by a feeling of lack of air. He referred to a case reported by Chapman, of Louisville, where similar symptoms were observed. As a result of these cases and of experiments made by the author, the following conclusions were reached:—A fairly common symptom of tobacco-poisoning is a deep gasping inspiration, occurring at intervals, and sometimes quite audible. This may be practically the only symptom complained of. It is probably due to a paralysing action of the drug on the respiratory centre, affecting especially the expiratory division, but also diminishing the irritability of the whole centre to afferent impulses. This symptom may persist from a few days to several months after the tobacco is discontinued. (Montreal Medical Journal, May, 1897.)

TUMOURS, MALIGNANT, OF THE LUNG.—Diagnosis from the Sputum. (By E. Betchart, *Virchow's Archiv.* Bd. 142, Ht. 1.) Until now but three cases (two sarcomata, one carcinoma) have been published in which a certain diagnosis of a primary malignant tumour was made during life from sputa. The author adds a fourth, a case of carcinoma of the lung. The sputum was of varying colour, sometimes brown-red as in infarct of the lung, but never like raspberry jelly. Under the microscope free fat drops, leucocytes and a large number of epithelial cells partly connected together. By the naked eye nodules 2-3 mm. by 2 mm. of a yellowish or brownish colour and gelatinous appearance were seen in the sputum. These were found to be particles of a carcinomatous growth. The diagnosis made during life was confirmed by a post-mortem examination. In contradistinction to the small granules found in the two cases of

carcinoma of the lung, large pieces of tumour were coughed up in the two cases of sarcoma of the lung. This is explained by the greater coherence of sarcomatous growth.—*Centralbl. f. inn. Med.* (Quarterly Medical Journal, January, 1897.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

ABDOMINAL DISEASE.

Mr. Greig Smith (*Treatment*, March 25, 1897) urges the desirability of avoiding the use of opium in these cases. He does not mention purgatives, but he advises the avoidance of iced fluids on the ground that by their administration the intestines may be "started into furious action." A course of treatment is sought for "which will certainly do no harm, but will probably do good, and which will not obscure the signs and symptoms, but will rather help in their evolution and interpretation." Assuming that a patient has symptoms coming on suddenly which may be due to simple colic or to "some grave condition, such as obstruction, or perforation of a viscus, or even extravasation of blood," he advises as the first thing to be done the administration of brandy in milk by the rectum, and that the patient should then be swathed in hot blankets. "The attendant now sits down by the bedside of the patient to watch him, and complete the diagnosis. And he ought scarcely to leave his side till the diagnosis is complete." Mr. Greig Smith goes on to say that the patient with colic makes a great fuss about his condition, whereas the subject of grave disease makes little fuss, and keeps his abdomen as still as possible. If the intestines are in motion Mr. Greig Smith considers that there is no perforation, because this condition causes paralysis and silence on auscultation, except at the seat of rupture, where there are "rare and mysterious blowing or rushing sounds." He then briefly refers to the signs of gaseous exudation into the peritoneal cavity. If the surgeon notes and keeps in mind every individual sign as it is evolved, Mr. Greig Smith says "it will be surprising if, at the end of half an hour, their aggregation do not permit of a diagnosis being made sufficiently accurate for exact treatment," and if it be decided that the condition is due to colic, he advises that the treatment should commence with a full dose of morphia. But here we get beyond the prediagnostic stage. Mr. Greig Smith's object seems to be to draw attention to the necessity for making "some sort of diagnosis" before commencing treatment. The practitioner described in the first paragraph of the paper as "the kindly physician who,

seeing pain, relieves it with his morphia syringe," will, however, perhaps hesitate to administer brandy instead of morphia to a patient in acute pain, and especially when the rupture of a tubal pregnancy is one of the conditions expressly stated as a possible cause of the symptoms. Many surgeons—and I am one of them—maintain that the strong opposition to the administration of opium in acute abdominal disease, which was, I think, started by Mr. Lawson Tait, and which certainly has led to a marked improvement in treatment, may, nevertheless, be carried too far. Opium is a most excellent and useful drug, even in acute abdominal cases, although of course the old-fashioned practice of putting patients deeply under its influence for days together was harmful, and often brought about a disastrous issue of the case. (Mr. John D. Malcolm's abstract in the Practitioner, May, 1897.)

APPENDICITIS.—Treatment of.

I think that the preliminary treatment is often worse than useless, and that the measures adopted in the very beginning are of extreme importance as regards the prognosis. A common procedure is the administration of a large dose of morphine, which quiets the pain and relieves the distress of the patient, but masks all symptoms. This prevents the proper study of the early stage of the complaint, the stage which is the most important, both as regards diagnosis and treatment. The question of the rapid or gradual increase in severity and the advent of sepsis are obscured by the opium treatment. A patient presenting himself with severe abdominal pain, whether he has fever, nausea, vomiting, prostration, and constipation, or not, should be suspected of having appendicitis. The most probable cause of sudden, severe, and not otherwise easily explained intra-abdominal pain, is appendicitis. Such a patient should be put to bed and thoroughly examined; very little opium or other anodyne should be given, but the patient must be kept at rest and most carefully watched. If the diagnosis can be made during the first six hours, and the patient can be kept under observation for six hours longer, the progress of the disease may tell the whole story. Certainly, in twenty-four hours from the beginning of the attack, we may be able to decide not only as to the diagnosis, but as to the probable course and result of the case. In my opinion, many of the casualties in this disease are due to neglect of the precaution which I have just recommended. The earlier the choice can be made between operative and palliative procedures the better for the patient. —Dr. Charles McBurney, Medical News, December 12, 1896.—(Medical Record, April 17, 1897.)

ASCARIS LUMBRICOIDES SIMULATING TYPHOID FEVER.

Dr. A. Chauffard, of Paris, relates this case occurring in a lad aged 18 :—The age of the patient, his recent arrival in this part of the country, the frequent occurrence of epistaxis, the slight swelling of the spleen, all suggested typhoid fever. This was, indeed, the diagnosis at which I first arrived, though I noted that the tongue was not that of a typhoid fever patient, being larger and flatter, that the breath had a strong odour of putrefaction, which is not usually the case in typhoid fever, that the fever was slight and yielded immediately to cold baths, of which only three were given, and lastly, that there were never any lenticular pink spots. The diagnosis, however, was soon cleared up by the repeated and spontaneous evacuation of ascarides, and all doubt was removed by the anthelminthic treatment. Within a week 28 round worms were expelled, after which the fever ceased, the patient gained in weight, and convalescence was established. The fact that the evolution of the disease and the expulsion of worms progressed on parallel lines pleads, in my opinion, in favour of the diagnosis of lumbricosis simulating typhoid fever. The practical deductions from this case may be summed up as follows :—Intestinal lumbricosis, when the parasites are present in sufficient number, may determine infective symptoms, simulating those of typhoid fever; methodical search in the fæces for the ova is indispensable for the institution of a suitable treatment, and for determining whether permanent recovery has been obtained. (From Dr. Chauffard's paper in the Medical Press and Circular, December 16, 1896.)

ASCITES, TUBERCULOUS.

M. de Mincis has found that guaiacol gives excellent results when addressed to tuberculous ascites, and has published several cases in which he applied it. One case was that of a young girl whose parents were tuberculous. The patient, who had had previously a pleurisy with effusion, presented a considerable amount of liquid in the abdomen, hindering in a notable manner the respiratory movements. Besides, the patient suffered from diarrhœa, night sweats, fever, and had lost flesh considerably. There was no doubt about the nature of the case, which was manifestly tuberculous. Once she was tapped, but the liquid quickly returned in spite of the various kinds of diuretics prescribed. At this moment M. de Mincis thought of trying guaiacol as an antithermi, associated with tincture of iodine, as an absorbent. He painted, every afternoon at the hour when the temperature attained its maximum, the abdomen with a mixture of half-a-drachm of guaiacol and two drachms of tincture of iodine. Almost immediately the temperature fell

two degrees, and an abundant perspiration with diuresis followed, while the abdominal pain was much relieved. After a few days of this treatment the liquid diminished in the abdomen and finally disappeared completely, and, what was more remarkable, the ascites did not return. In three other cases of tuberculous peritonitis, accompanied with ascites, the author tried the same treatment with equal success. Where he found the iodine to irritate the skin too much, he replaced it by oil of sweet almonds. in the proportion of three parts of guaiacol to two of the oil, (Medical Press and Circular, January 13, 1897.)

BILIARY FISTULA, POST-OPERATIVE.

Biliary fistula following on operation is quite a different matter from mucous fistula, as although in some cases it is compatible with good health, the inconvenience caused by thirty ounces of bile flowing from the fistula daily produces so much discomfort that in all the cases which have come under my notice the patients have preferred to accept the risks of operation rather than to retain their disability. If the ducts be clear and the fistula be small the application of the actual cautery to the margin of the fistula will frequently result in its closure. That failing, the abdomen may be opened, the gall-bladder detached, and the opening sutured. Or the less severe method may be first tried of dissecting the fistula with its peritoneal covering intact away from the skin margin, afterwards doubling in the mucous edges, suturing them accurately, and over this applying one or two layers of buried sutures before bringing together the skin. Where, however, the ducts cannot be cleared, and the gall-bladder is large enough to permit of it, the operation of cholecystenterostomy may be performed. If the fistula be dependent on gall-stones or fragments in the ducts, the ducts may be syringed through a catheter daily with olive oil or with a 0·5 per cent. solution of sapo animalis, as recommended by Dr. Brockbank; or a solution of turpentine in ether may be used. (From Mr. Mayo Robson's Hunterian Lecture II., British Medical Journal, March 20, 1897.)

CHOLECYSTITIS IN TYPHOID FEVER.

N. Alexeieff, in the *Dietskoia Meditzina*, described the case of a child 5 years of age, in whose right hypochondrium, during the course of a typical typhoid fever, a tumour appeared, which extended four to five finger-breadths above the arch of the ribs; above it dulness was demonstrated, which merged into that of the liver. The tumour, which was painful, was elastic, and peritoneal friction sounds could occasionally be heard over it. Fever and delirium were present, and the urine contained albumin and bile-pigment. Icterus was absent. The

abdomen, especially on the right side, was tender to pressure ; the patient rested on his back with the hips flexed. Meteorism, a rapid pulse-beat and profuse perspiration were also present. An abscess of the gall-bladder or perivesicular suppuration was diagnosed, and an incision made, two finger-breadths below the arch of the ribs. On opening the peritoneum, a serous fluid, coloured with bile, gushed forth ; the intestinal coils were adherent, and pus was found between them ; on incising the gall-bladder a quantity of pus, containing Ebert's bacillus in pure culture, was discharged. Drainage was employed, and in a short time the child recovered ; however, on the third week a relapse of the typhoid fever occurred, followed by a perfect recovery.—*Wiener Klin, Wochenschr*, 1897, x, 99. (Pediatrics, May 1, 1897.)

CHOLELITHIASIS.

With a calculus once formed, either in the gall-bladder or in the intrahepatic bile-ducts, the question naturally arises whether its removal can be accomplished by the action of any foreign solvent. To this, I think, we must give a negative answer, or to be more exact, I do not think we have any positive proof that its removal can be accomplished by this method. Indeed, it seems highly improbable. Far more plausible is the assumption that its solution may perhaps be brought about, in part at least, by agencies which tend to increase the flow and alkalinity of the bile, aided by an increase in the peristaltic contractions. Cholagogue effects, however, are not readily obtained. Indeed, the most recent experiments of Stadelmann and his co-workers in Germany, as well as the experiments of Pfaff in America, tend to show that with the exception of bile itself, and possibly of sodium salicylate, there are no substances which act as true cholagogues. Thus the supposed cholagogues, calomel, corrosive sublimate, rhubarb, podophyllin, turpentine, sodium benzoate, salol, &c., are practically inactive, and of little or no value in stimulating the secretion of bile. Quite different, however, is it with the salts of the bile-acids, for if these are introduced into the gastro-intestinal tract their absorption is speedily followed by an increased secretion of bile, and of bile rich in bile-salts with their solvent action on cholesterin and bile-pigment. Obviously, such a line of treatment could be pursued with safety only when there is a free outlet through the bile ducts. (From Dr. Chittenden's paper in the Medical News, May 1, 1897.)

Cholelithiasis.

Regarding the prevention of gall-stones, Dr. Charles McBurney thought none would suffer who form proper habits of exercise and maintain healthy elimination during the comparatively

short period of gall-stone formation. The cases could be divided into two classes : those which should be operated upon and those which should not be operated upon. As a rule, we must consider as inoperable those cases in which there are frequent and short attacks, with sudden relief, indicating the passage of small gall-stones, thus demonstrating the probability of obtaining relief in a similar way again. For, as a rule, when a person passed small stones he did not have large ones. On the other hand, when an operation was indicated it should be done promptly before the formation of ulcerated adhesions or the development of cholæmia. As had been pointed out by Dr. Lange, the operative dangers related to cholæmia and the tendency to hemorrhage depended thereon. It was to the prevention of these conditions, or the anticipation of them by early operation, that attention should be directed if progress is to be made in the treatment of cholelithiasis. Let the medical practitioner mark well those cases which do not pass their gall-stones as the ones which should be subjected to operation at an early stage. (From a leader in the Medical News, May 1, 1897.)

Cholelithiasis.—Diagnosis of.

For therapeutic purposes, especially from the point of view of surgery, the differential diagnosis between obstruction of the common duct by a calculus and obstruction by other causes, such as external pressure, becomes of great importance. Courvoisier has shown that the following points may be considered important in connection with the diagnosis of obstruction by a calculus :— (1) Former attacks of jaundice of short duration ; (2) persistent jaundice of varying degrees of intensity ; (3) jaundice persisting for years ; (4) former attacks of colic, especially if associated with jaundice; (5) former passage of calculi in stools ; (6) tumour of the gall-bladder, absent or small ; (7) fever of a more or less intermittent character. (From Dr. G. L. Peabody's paper in the Medical News, April 24, 1897.)

DIARRHŒA, INFANTILE.—Treatment by Sterilised Water.

Watu (*Thèse de Paris*, 1896-97, No. 40, ii.), on the basis of cases treated in Grancher's service, advocates the treatment of infantile diarrhœa by a regimen of boiled water, cooled to a suitable temperature, and given in small quantities every hour or half-hour, or as thirst demands, to the exclusion of all food, for eight, twelve, or even twenty-four hours. By diluting the irritating secretions, dislodging the *débris* of decomposed alimentary matter retained in the folds of the mucosa of the canal, increasing the pressure in the blood vessels and dissolving

the toxins attached to the formal elements, the ingested water carries away and eliminates the poison from the system, changes the morbid character of the stools and effects a reduction of the temperature and recovery, especially when administered in acute cases at their commencement and in children not very young. (British Medical Journal Epitome, April 17, 1897.)

FÆCAL TUMOUR, NEW SIGN OF.

Gersuny (*Wien. klin. Woch.*, October 1, 1896) describes a sign which, if detected, will often save a patient from needless laparotomy. He is not as yet certain how commonly it is to be met with in cases of fæcal impaction. If the tumour be firmly pressed on with the finger, the intestinal mucous membrane adheres to the sticky masses of which it is composed ; when the pressure is removed the mucous membrane slowly disengages itself, and the sign consists in the recognition of this gradual separation. The only conditions necessary for its production are a certain degree of dryness of the intestinal mucous membrane and a certain impressibility of the fæcal mass ; the surface of the latter can be softened, if necessary, by an oil enema. The important factor in the separation of the intestinal wall from the tumour is undoubtedly the pressure of the intestinal gases. The characteristic sensation can be obtained by pressing the oiled or soaped volar surface of one fore-finger into the palm of the other hand and very slowly withdrawing it. Gersuny relates a case of an enormous fæcal tumour in a woman of 32 ; this sign was present, but as he did not at that time recognise its significance he opened the abdomen. He also records two cases occurring in Oser's practice, in which the detection of this sign not only saved the patients from operation, but also indicated the correct line of treatment. All these three cases seem to belong to the same clinical group ; the the affection began in infancy with irregularity of the bowels and constipation, which remitted for a time under the influence of purgatives and irrigation, only to recur with increased intensity, till at last chronic intestinal obstruction resulted. With this was associated hypertrophy of the large intestine, which became longer, wider, and more thick-walled ; the contraction of the walls offered at times an increased obstacle to the passage of fæces. Patients suffering from this symptom complex are ill-developed, pale, and thin ; purges, irrigation, and massage fail to affect the fæcal tumours. The only means of removing these is the combination of oil enemata and massage, which reduce the intestinal contents to a pasty mass, which can then be expressed. The detection of Gersuny's sign, therefore, indicates this treatment. (British Medical Journal Epitome, January 2, 1897.)

GALLSTONE, INTESTINAL OBSTRUCTION FROM AN IMPACTED.—Recovery.

Wilkinson (*British Medical Journal*, February 13, 1897) reports an interesting case in which intestinal obstruction was produced by a gallstone about the size of a pigeon's egg. The patient had all the usual symptoms of intestinal obstruction without, however, any localising symptoms. Treatment consisted of copious and frequently repeated enemata of tepid water, alternating with nutrient injections and hypodermatic injections of morphine and atropine (gr. $\frac{1}{3}$ and $\frac{1}{140}$), to allay the excessive pain, a little ice being allowed for thirst. The pulse was 120 to 140, wiry, and occasionally intermittent; temperature 99 deg. F. The tongue was dry and glazed, the abdomen tympanitic and distended, especially in the cæcal region. Nothing was discoverable on palpation and rectal examination. The patient continued in this condition, with some slight amelioration alternating with exacerbations, for eleven weeks, existing, upon the average, on not over three ounces of milk a day. At the end of that time the author was called suddenly to find his patient in a state of collapse, with great pain and straining. A hard mass was felt blocking the rectum; it was removed by pressure through the posterior vaginal wall, and proved to be a gallstone the size of a pigeon's egg, faceted and weighing ℥v gr. xliss. The patient recovered slowly, but completely. (American Journal of Medical Science, April, 1897.)

HÆMATEMESIS.—Treatment of Copious.

Hirsch directs attention to profuse uncontrollable hemorrhage in ulcus ventriculi. As is well known, internal therapy, and rest and cold are useless in these cases. That instances of surgical interference are, as yet, few, is due to the fact that patients with gastric ulcer with profuse hæmatemesis are, as a rule, first placed in the medical wards, and are seen by the surgeon only when it is too late. Hirsch, although recognising the fact that the seat of the ulcer cannot always be located, yet favours operative interference even during a hemorrhage, following the maxim, "when blood squirts, ligate." Endoscopic examination of the walls of the stomach through the wound, just as in cystoscopy, he considers feasible in these cases. He concludes that operative interference is justified whenever (notwithstanding the most rigid rest and diet) there are repeated hemorrhages, which, by their frequency and profuseness, threaten the life of the patient. As an indispensable condition for operative interference, a certain diagnosis of hemorrhage *ex ulcere* must be established, eliminating hemorrhage due to cirrhosis of the liver, aneurism, atrophies, nutmeg liver and hemorrhages from the parenchyma of the stomach. The

differential diagnosis between hemorrhage due to real ulcer and parenchymatous bleeding is not always easy to make. (Medical News, February 27, 1897.)

LIVER, CIRRHOSIS OF THE.

Dr. Kelynack read a paper before the Manchester Clinical Society, based on an analysis of 121 specimens of common cirrhosis of the liver. He said most cases met with in hospital, if not directly due to alcohol, occurred in alcoholic subjects. Nearly fifty per cent. of all cases died from the direct effects of the cirrhosis. Death from tuberculosis was common. The relation of males to females was about two to one. The average age of the males was 45½ years; of the females 42. Ascites were present in fifty-six of all cases, and occurred constantly in association with hæmatemesis, so these were not to be considered as mutually exclusive. The average weight of the cirrhotic liver in males was about fifty-three ounces; in females nearly fifty-four ounces. The average weight of the spleen in males was fourteen and a half ounces; in females a little over eleven and a half ounces. (British Medical Journal, January 2, 1897.)

PALPATION IN THE WARM BATH.

Lennhoff (*Berliner klin. Wochenschrift*, 1896, No. 48) suggests the use of the warm bath as an aid to diagnosis. This has been used at times by various observers, but Lennhoff has for some time practised it on a large scale. The patient is placed on a support suspended from the sides of the bath. After ten or fifteen minutes in water as hot as can be borne, the skin becomes soft, the muscles relaxed. Many things can then be felt in the abdomen and pelvis that are otherwise inaccessible. There are all the advantages of narcosis without the inability to control the patient's movements at will, and so assist in the examination, as in palpating tumours affected by respiration. (American Journal of Medical Science, May, 1897.)

PERITONEAL INFECTION.

Mr. H. E. Durham, who read this paper before the London Medico-Chirurgical Society, said that recent researches had shown that a considerable degree of general resistance against pathogenic microbes was afforded by inducing leucocytosis. This resistance might be materially increased by the addition of the specific (passive) immunity afforded by appropriate serums. The work of Issaeff on these matters was especially referred to, and was confirmed by original observations. It was suggested that these principles should be utilised in the treatment of local infective conditions, which required trans-

peritoneal operation. The nature of the material to be used in producing the leucocytosis of the peritoneal cavity was discussed. Whilst the probable infecting agent could not be diagnosed before operative interference, there was considerable evidence from the researches of quoted authors and from original observation that streptococci was an important factor in fatal peritonitides in man. It was therefore suggested that intraperitoneal injection of antistreptococcic serum should be given the day before proceeding to operate on "dangerous" cases through the peritoneum; by this means specific passive immunity would be afforded against streptococcal invasion as well as increased general resistance against other microbes. Another point which was brought forward was the importance of paying attention to the cleansing of the omentum and upper part of the peritoneum in lavage of the peritoneum for suppurative peritonitis. This was consequent upon the observation that these regions might lodge abundant microbes (sufficient to cause fatal effect) after inoculation (intraperitoneal), whilst the peritoneal fluid was sterile. One such case in a man, and a number of similar conditions in experimental animals, had been observed. Attention was called to the hitherto overlooked paths of lymph absorption from the peritoneal cavity; the lymph tracks of the anterior mediastinum were those especially concerned. Specimens were demonstrated in illustration of some of the points raised. (British Medical Journal, March 13, 1897.)

PERITONITIS, PERFORATIVE.

Perforative peritonitis is manifested by the sudden onset of the disease, by diffuse pain and tenderness, rigid abdominal walls, fever, and vomiting, and by the impossibility by inspection, palpation, or auscultation to ascertain intestinal peristalsis, the latter being almost positive proof of the presence of gas in the free peritoneal cavity. According to the author's observations, meteorismus peritonei in perforative peritonitis caused by affections of the appendix is rare, while he has seldom found it absent in perforations of any other portion of the gastro-intestinal canal. According to the number and virulence of the microbes which find their way into the peritoneal cavity with the extravasation, the resulting peritonitis is either diffuse or more or less circumscribed. The colon bacillus is invariably present in the inflammatory product, but, in addition, streptococci, staphylococci, putrefactive bacilli, the typhoid bacillus, or bacillus of tuberculosis, according to the nature of the primary affection, may also be found. Perforative peritonitis must be regarded and treated as a strictly surgical disease. The primary lesion must be exposed and treated as soon as a diagnosis can be made,

and the necessary measures applied to limit the extension of the infection and to prevent death from toxæmia. (From Dr. N. Senn's article in the Medical News, May 8, 1897.)

PERITONITIS, PNEUMOCOCCUS, IN CHILDHOOD.

Following up an earlier study on this subject, Brun (*La Presse Médicale*, February 27, 1897) records three new observations which go to prove his earlier claim that in childhood peritonitis due to the pneumococcus presents characteristics and a course which usually permit its distinction from peritonitis due to other causes. His conclusion, he finds, is also supported by an analysis of the cases reported by other observers. Taking account only of cases occurring below the age of 15 years, in which the diagnosis was confirmed by bacteriological examination, he has tabulated fourteen cases, from which he makes some interesting deductions. First, it seems evident that this form of peritoneal infection is much more frequent in girls than boys (eleven out of fourteen cases). This difference is worthy of comment, for if one is to believe the conclusions of Cassaët, who has recently contributed an important memoir on this form of peritonitis, such a predominance in favour of the female is not observed in adult cases. This frequency of pneumococcic peritonitis in girls is also interesting, as it serves in a measure to explain the mode of inoculation of the peritoneum. As Boulay has observed the presence of the diplococcus lanceolatus in the cavity and the walls of the uterus, it is competent to ask if pneumococcic peritonitis does not present the same mode of infection as many of the other forms—that is, by passage of the pathogenic organism from the uterus to the peritoneal cavity by the lymphatics or by the tubes. Whatever be the hypothesis, the fact remains, however, that in all the cases in which the localisation of the lesion has been clearly shown, this has been always found to be in the lower portion of the cavity—in the iliac fossa or the true pelvis. Clinically, this variety appears as an encysted sub-umbilical peritonitis. It begins, as other acute forms, with violent pain in the belly, fever, vomiting, and diarrhœa ; but, after a short time, this severity subsides, and tumefaction above the pubis and in the iliac fossa appears, at times, distinctly fluctuating. This localisation of the lesion, in itself significant, acquires a value almost pathognomonic when accompanied by pouting or fistulisation of the umbilicus. The prognosis seems not so grave as in other forms of purulent peritonitis. Of the fourteen cases collected three died and eleven recovered, one without intervention after spontaneous opening at the umbilicus and through the vagina, the others after cœliotomy. Resort to operation is recommended in all such cases. (American Jour. of Med. Science, May, 1897.)

PRURITUS ANI.—Treatment of.

Brocq (*Journ. de Méd. de Paris*, March 14, 1897) recommends the following treatment for itching of the anus :—The patient is to apply first a soothing ointment of vaseline and oxide of zinc, and then a large quantity of the following powder, which is kept in position by absorbent cotton—℞ Powdered camphor, 2 parts ; oxide of zinc, 30 parts ; subnitrate of bismuth, 30 parts ; chalk, 40 parts. Frequent baths with borated water or tar soap are advisable, and the introduction at night of a suppository of cocoa butter containing cocaine and extract of belladonna is often a useful addition to the treatment. (Medical News, May 15, 1897.)

TUBERCULOUS MASSES IN THE ABDOMEN.—Rapid Absorption of.

Dr. Churton showed three such cases before the Leeds and West Riding Medico-Chirurgical Society :—(1) A boy, aged 10 years, was admitted into the Leeds Infirmary on August 26, 1896, with ascites. His parents were very poor. The treatment was by rest, good food, and one grain of iodoform with gentian extract every four hours ; the abdomen was painted with tincture of steel. On September 20 the fluid was all gone, but two thick masses remained, one extending from the left costal margin to the umbilicus, and the other in the right lower epigastrium. On November 12 the size of the mass (which then extended from the left costal margin to a point $2\frac{1}{2}$ in. to the right of the umbilicus, and was oblique and curved, with the convexity downwards) was 8 in. by 2 in. by (?) $\frac{3}{4}$ in. On February 1, 1897, there was only a very small area of thickening above and to the right of the umbilicus. (2) A woman, aged 37 years, was admitted on August 4, 1896. Her temperature during the first week averaged 98° F. in the morning and 102° in the evening. Similar treatment was followed out as in the first case, with the addition of 1 ounce of quinia mixture (5 grains) three times a day. On September 7 the ascites had disappeared. The patient had never looked ill ; the disease was localised in the abdomen. She had lived in a damp house on a farm, and drank much unboiled milk. On September 12 the patient went home. On October 25 the abdomen began again to enlarge. On December 8 she was re-admitted. On December 12 she was tapped, and 440 ounces of serum fluid were withdrawn. The former treatment was resumed. A mass, the size of two small closed hands, in the mid-abdomen was found. By February 6, 1897, the mass had gradually and entirely disappeared. She took 2 grains of iodoform and 3 grains of gentian extract every four hours, and 1 ounce of quinia mixture (3 grains) three times a day during her stay in the hospital. (3) In a man lately

under observation, less favourably placed and less healthy, the absorption of a similar mass occupied nearly a year. (The Lancet, February 27, 1897.)

ULCER, GASTRIC.

Dr. Barrs reported to the Leeds and West Riding Medico-Chirurgical Society two cases of gastric ulcer, presenting points of special interest, mainly in the treatment adopted. (1) A domestic servant, aged 20, was admitted to the hospital for profuse and repeated hæmatemesis. The case was one of great severity, and at one time the profound anæmia placed life in the most obvious danger. Nevertheless, at the end of four days the patient was taking scraped beef, and six days later was eating ordinary diet without discomfort. In the beginning ordinary methods of treatment had been adopted, including the use of nutrient enemata and suppositories, but these had to be abandoned at the end of twenty-four hours on account of the great distress which their use entailed, and the rectal discharge which they set up. Dr. Barrs expressed the opinion, based upon the observation of this and other cases, that the so-called nutrient suppositories and enemata had little or no nutritive value, and stated his entire disbelief in the existence of any digestive power in the rectal secretions or contents. The chief indications for treatment in such cases consisted in the administration, either by the mouth or by the rectum, or by both, of sufficient water to keep the patient free from thirst (usually a most urgent symptom in profuse hæmatemesis), and to abstain from all attempts at feeding until the patient was able to take solid food by the mouth without pain or vomiting when well-cooked meat was probably the most valuable and most easily-digested aliment. The dangers, such as they were, which arose from feeding by the mouth in cases of gastric ulcer, were due more to the bulk of the meal than to its composition. Dr. Barrs also advocated the administration of bismuth carbonate in large doses—20, 30, or 60 grains ; not in the usual mixture form but simply stirred up in water. (2) A domestic servant, aged 23, was sent into the infirmary by her medical attendant because he feared that perforation had taken place the night before. There had been profuse hæmatemesis at the moment when perforation was supposed to have taken place. Six hours after admission the patient was in such agonising pain in the abdomen, with all the other usually described signs of acute peritonitis, that abdominal section was determined upon. Mr. Littlewood opened the abdomen between the umbilicus and the ensiform cartilage. No gas was found in the peritoneal cavity, and no evidence of peritonitis could be found, and after a careful search the wound was closed,

and the patient, surgically speaking, made an uninterrupted recovery, but she still suffered from a certain amount of pain after food, and occasionally vomiting with slight hæmatemesis. Dr. Barrs had not a doubt that the operation was justified by the signs present in the case, though no perforation was found. Perhaps the occurrence of profuse hæmatemesis ought to be regarded as strongly negativing the likelihood of perforation at the same time. It was quite possible, and very probable, that small perforations of the stomach in cases of chronic ulcer did take place and give rise to intense pain, and all other signs usually associated with perforation, without producing anything more than the most localised peritonitis, from which the patient readily recovered. (British Medical Journal, March 27, 1897.)

VOMITING OF TUBERCULOUS PATIENTS.

M. Mathieu notes the importance of checking this grave symptom, which so seriously interferes with nutrition. Since these patients vomit because they cough, the plan of preventing the former by treating the latter symptom has resulted in giving opiates, cocaine, or bromides, and in making various revulsive or sedative applications to the epigastric region, as blisters, actual cautery, ether-spray, belladonna, or cocaine-plasters. With any of these, failures are more frequently encountered than success. Since these patients vomit because the food excites the gastric mucous membrane, which has the same nervous supply—the pneumogastric—as the lungs, therefore the gastric mucous membrane is the starting-point of the expulsive reflex. Two remedies are cited. Chloroform-water is diluted with an equal part of ordinary water and given by the mouth in doses of from two to four teaspoonfuls every ten minutes. The other is three grains of menthol dissolved in five ounces of menstruum, of which the same dose as above is given at intervals after meals. Besides these, small portions of ice may be swallowed immediately after the meals. In the majority of instances the employment of these methods has been followed by success.—*Bulletin Général de Thérapeutique*, 1896, 23e liv. p. 720. (American Journal of Medical Science, April, 1897.)

WOUNDS OF THE ABDOMEN, PENETRATING.

It must be admitted that, in the absence of serious visceral lesions, penetrating wounds of the abdomen are injuries from which the patients are very likely to recover without operative treatment, and that when such patients are submitted to laparotomy death may occur solely in consequence of the operation. The general symptoms in cases of penetrating punctured wounds of the abdomen, with the

exception of those due to profuse hemorrhage, furnish absolutely no reliable information in the differentiation between simple penetrating wounds and penetrating wounds complicated by visceral injuries. With the exception of the last-mentioned symptom (the escape of the contents of the stomach or intestines through the external wound), and the indication pointing to the necessity of arresting internal hemorrhage, there is nothing about the local or general symptoms in cases of penetrating wounds of the abdomen that enables the surgeon to decide with any degree of positiveness whether visceral injuries exist or not, and, consequently, whether laparotomy should or should not be performed. Severe shock may attend even a non-penetrating wound, and it may be absent, or at least not well marked, in cases of multiple perforation of the intestines. Vomiting takes place as frequently in wounds of the abdominal parietes and in simple penetrating wounds as when the viscera have been perforated. The pulse is slow and compressible in all cases, and nothing characteristic in its qualities is observed, even if the stomach or intestines have been injured. Pallor is present in all penetrating wounds of the abdomen soon after the receipt of the injury, and it is only more pronounced when produced, at least in part, by sudden and severe internal hemorrhage. Pain is a very unreliable and often misleading symptom, as it may be moderate or almost completely absent soon after the injury has been inflicted, even when multiple perforations are present.—*American Text-Book of Surgery*, *p.* 677. (Medical Record, January 16, 1897.)

AFFECTIONS OF URINARY AND GENERATIVE SYSTEMS.

ANURIA CALCULUS.

Mr. Alfred Parkin (*Lancet*, September 12, 1896) records a most instructive case of total suppression for four days which recovered after operation. The patient, a man of 56, had for years suffered from signs of calculi in both kidneys, but had obstinately refused operative treatment. He was seized on December 18, 1895, with severe pain in the left loin, and this was followed by sickness and drowsiness. He passed no urine, and none could be drawn off from his bladder for four days. He was then chloroformed and his left kidney cut upon. It was found very congested, and an incision into the cortex caused profuse hemorrhage, which required plugging to control it. The pelvis was then opened from behind, and a large conical-shaped calculus removed from the upper end of the

ureter. The man recovered without a renal fistula. In commenting upon the case, Mr. Parkin said one great difficulty was to know which kidney to cut on. If there were no tumour he thought local tenderness was the surest guide. In any future case he would not cut into the cortex and produce the severe hemorrhage he had experienced, but would incise the pelvis posteriorly at once, as it was almost certain the calculus was there. (Treatment, March 25, 1897.)

DIURETIN.

The patient had been aspirated repeatedly, and he had had trinitrin added to his medicine; but the amount of œdema of the extremities was so great that we discussed the advisability of removing fluid from the legs by operation, and decided against so doing on account of the extremely weak condition of the patient; in fact, he appeared to be quite *in extremis*. At this time, therefore, we employed diuretin in place of any other form of diuretic, giving 20 gr. three times daily, and the relief of the urgent symptoms has been remarkable. The quantity of urine passed has again increased, the œdema of the legs, and more particularly of the hands and arms, has diminished, and the patient has been free from asthmatic attacks. This case illustrates well the occasional advantage to be derived in renal dropsy from a diuretic line of treatment, yet while laying stress upon the importance of its employment in suitable cases, I would warn you against endeavouring to apply it to all cases; and, further, against drawing conclusions too hastily about the amount of permanent good to be obtained. (From Dr. Nestor Tirard's paper in the British Medical Journal, March 20, 1897.)

HÆMATURIA.

(By Dr. Ord.) Usually the blood that comes from the kidney itself is very finely and equally distributed through the urine at the time of passing. You will find much more of blood-corpuscles than you do of blood-clot. The lower down the seat of hemorrhage the more obvious is the presence of clot. If the hemorrhage comes from the urethra, you find that either the blood comes with the beginning of passing of urine or at the end. So also when it comes from the bladder, to a large extent you find more clot, and mostly a larger quantity; but very often here, again, you find the blood passing at the end or at the beginning of micturition. The blood from the bladder and the urethra is also generally a good deal brighter than the blood which comes from the kidney. The hemorrhages which occur in nephritis and in active and passive congestion are mostly rather symptomatic than requiring treatment directly intended for the suppression of hemorrhage; but in these and other

conditions of bleeding from the kidney proper, if the amount be very considerable, it is, of course, necessary to keep the patient quiet, to maintain regular action of the bowels, and to institute a light diet. It is very rarely necessary to do more than this *quâ* hemorrhage. Where the hemorrhage comes from the pelvis, infundibula, and ureter, if the cause be merely inflammatory, it hardly requires special treatment. If it be due to the presence of calculus, the first step in treatment is to keep the patient perfectly quiet in the horizontal position ; but a patient with calculus may bleed sometimes a good deal, even though at rest, and then you have to consider whether there are any remedies which you may give to him with advantage in order to stop the hemorrhage. Of course, you cannot give opium in cases of this kind. I have given you reasons for that before. Benzoate of ammonia is one of the best remedies I know, given in 20-grain doses three times a day ; sometimes perchloride of iron, sometimes dilute nitric acid. Those are, in fact, the drugs which I have found most useful. Occasionally, hemorrhage from the pelvis of the kidney and from the bladder may be due to parasites. At times the mere presence of ammoniacal urine in the bladder, particularly in children, will give rise to troublesome and persistent hemorrhage. A child may have had a purulent cystitis determining decomposition of the urine soon after it has reached the bladder. The constant contact of highly ammoniacal urine with the delicate mucous membrane of the bladder is by itself equal to determining and keeping up hemorrhage. I have seen more than one case of the kind. Benzoate of ammonia has the power of inducing an acid reaction of the urine, and where hemorrhage depends upon high ammoniacal alkalinity, the administration of benzoate of ammonia will very often stop the hemorrhage in twenty-four hours. It is really a very valuable drug for this purpose and in other kinds of cases than this. (The Practitioner, February, 1897.)

KIDNEYS, SYPHILIS OF.

The prognosis of nephritis occurring during the secondary period of the disease is nearly always favourable. Tertiary nephritis, if of a gummatous type, yields as promptly to specific treatment as do gummata in other parts of the body. When degeneration has proceeded to complete destruction of secreting substance there can be no restoration of tissue, and specific treatment avails only in preventing further extension of trouble. Welander's conclusions, based on a thorough study of the matter, seem to show that nephritis, due to secondary syphilis, is rarer than that occasioned by full doses of mercury. The important lesson to be drawn from the study is that examinations of the

urine should always be practised in cases of syphilis; that when albuminuria and cylindruria are observed the practitioner should carefully consider as to whether this is not due to drugs rather than to the disease for which the medicine is administered; that toxic effects occur readily when the kidneys are crippled, and hence mercury must be administered with extreme caution. It seems scarcely necessary to state that in addition to specific treatment cases of syphilitic nephritis should receive the hygienic and hydrotherapeutic and medicinal care appropriate to inflammation of the kidneys when it is due to other causes. (Therapeutic Gazette, February 15, 1897.)

NEPHRITIS, INTERSTITIAL, IN CHILDHOOD.

The most striking physical signs which attend the disease are:—(1) Wasting; (2) dryness, absence of perspiration, coarseness, inelasticity, and pigmentation of the skin, together with anæmia; (3) high arterial tension and cardio-vascular hypertrophy. The chief symptoms are:—(1) Cerebral, including headache, vertigo, vomiting, and convulsions; tetany and visual disturbances, such as amaurosis or diplopia, have been noted and also cerebral hemorrhage in two cases. (2) Gastro-intestinal, consisting of easily excited attacks of vomiting and diarrhœa, not necessarily uræmic; sometimes there may be obstinate constipation or constipation alternating with diarrhœa, epigastric or abdominal pain. (3) Urinary symptoms, including polyuria, often associated with thirst, and sometimes with enuresis; low specific gravity of urine, albuminuria, and hæmaturia. (4) Pulmonary symptoms, such as dyspnœa, bronchial catarrh, and those of pulmonary œdema have been noted; asthma as in adults may possibly occur. (5) Cardiac symptoms, such as præcordial pain or distress with dyspnœa may arise; they do not appear to be so marked as in adults. (6) Dropsy is rarely met with in cases of interstitial nephritis. Yet sometimes slight general anasarca may occur, seldom lasting more than a day or two. It usually is noticed in connection with an attack of headache or vomiting, and is associated with scanty, smoky, and albuminous urine containing blood casts. Such attacks might be considered to mark the onset of the mischief, but the general appearance and condition of the patient show that the disease is of long standing, although the dropsy and hæmaturia have been the first indication of illness. (From Dr. Guthrie's paper in The Lancet, February 27, 1897.)

NUCLEO-ALBUMIN AND MUCIN.

These substances may be conveniently considered together, as they both appear to be frequently present in minute quantities in the urine of health, and, moreover, have some important

chemical properties in common. Both are precipitated from urines by dilute mineral acids, and redissolved on the addition of an excess of alkali. They differ from all the other proteids met with in the urine, in that they are precipitated by dilute acetic acid. The precipitate of nucleo-albumin is soluble in a slight excess of the acid; that of mucin is not. Nucleo-albumin also contains phosphorus, whilst mucin does not; and the two substances also differ in their reactions with certain anilin dyes. Nucleo-albumin occurs in the protoplasm of the epithelial cells of the urinary tract, and in particular has been obtained from the cells of the papillary portion of the pelvis of the kidney. The appearance of nucleo-albumin in the urine is therefore probably due to an abnormal disintegration of these cells. But beyond this nothing very definite is known about the subject at present. (From Dr. A. G. R. Fullerton's paper in the Practitioner, December, 1896.)

RENAL OPERATIONS.

M. Albarran, in the Congress of French Surgeons, drew attention to certain well-known reflex phenomena which may follow upon operations on the kidney (nephrorrhaphy, nephrotomy, nephrolithotomy)—namely, uncontrollable vomiting, with pain and tenderness in the epigastrium and loins; the patient is pale, anxious, the pupils contracted, the pulse small and rapid, and the temperature at or about normal. These symptoms may disappear after twenty-four or thirty-six hours, or they may continue without abatement; and should the case terminate fatally no explanation of the phenomena is to be found on the most careful post-mortem examination.—*Rev. de chir., Paris, November* 10, 1896. (Edinburgh Medical Journal, February, 1897.)

STONE, VESICAL.

In dealing with this subject in his Bradshaw lecture, Harrison (*British Medical Journal*, December 12, 1896) says of cystotomy that he believes the tendency to avoid the perineal operation is not productive of the best results in many cases in which the infected bladder is greatly relieved, and often permanently cured of a marked cystitis by the thorough drainage secured in this operation. The suprapubic operation, the author believes, has its value, and is of service in explorations of the bladder and the removal of new growths, or in cases of very large stones, though the great mortality seen in the latter cases must be remembered. The success attendant upon the operation of litholapaxy has been so great that no one can question its value and its usefulness in the great majority of cases. The old objection that the stone is more liable to recur has been

disproved, and an increasing movement in the technique of the operation is gradually decreasing the number of recurrences. The fact that these recurrences are found in cases over 60 years of age, or where there is some impediment in the urinary function, leads the author to conclude that it is usually an enlarged prostate and the attendant atony of the bladder which are responsible for the recurrence of the stone. In this connection the author believes there are certain cases of recurrent stone, due to enlarged prostate glands, in which castration, by relieving the hypertrophy, prevents the recurrence of the stone. (From an abstract in the American Journal of Medical Science, May, 1897.)

TESTICLE, UNDESCENDED.

Mr. Horrocks read a paper on this subject before the Bradford Medico-Chirurgical Society. Among the causes mentioned were (1) Intra-uterine peritonitis giving rise to adhesions between the testicle and the cæcum or small intestine. (2) Contraction of the external abdominal ring owing to over-development of transverse fibres. (3) Incomplete development of the inguinal canal. (4) Absence of the Gubernaculum testis. (5) Excessive action of cremaster due to reflex irritation (phimosis, &c.). (6) Undue shortness of the vas deferens of the vessels of the cord. (7) Long meso-orchism, allowing the testicle to wander freely in the abdominal cavity. Mr. Horrocks mentioned in connection with cause (1) that adhesion to the cæcum may not prevent descent of the testicle, but that the cæcum may descend with the testicle and give rise to a hernia with an imperfect peritoneal covering. With regard to the functional activity of an undescended testicle, it was shown that it was not necessarily sterile as Curling asserted, but that its activity depended less on its position than on its freedom from inflammatory attacks following injuries. The complications of undescended testicle are :—(1) Inflammation, especially in inguinal position. (2) Special liability to malignant disease, more particularly in testicles lying in the inguinal canal. (3) Hernia, the bowel being sometimes adherent to the testes. *Treatment.*—(1) By truss was deprecated as worse than useless, owing to the difficulty of getting downward pressure, while at the same time injurious pressure was exerted on the testicle and on the vessels of the cord. (2) By transplantation. Daily downward manipulation was said to be useless. *By operation.*—Drawing down and suturing the testicle to the scrotum, obliterating the processus vaginalis, and suturing the ring. This operation is not successful when the cord is too short, being followed either by re-assent of the testicle or by its atrophy. Dissection of the globus minor from the testicle in order to give greater length

to the cord, was tried in one case, but the testicle atrophied. Assuming the testicle to be not liable in any given case to attacks of inflammation, it was recommended that no operation be performed before the age of thirteen, as up to that age there is a prospect of the testicle descending normally. In the meantime, phimosis or any condition liable to cause reflex action of the cremaster may be dealt with. A hernia co-existing with the undescended testis must be dealt with on ordinary lines, the liability of the presence of the cæcum with an imperfect covering being borne in mind. (Medical Press and Circular, January 27, 1897.)

URETERS.—Catheterism of, in the Male.

In order to be successful in using Casper's instrument, one will do well, I believe, to observe the following rules:—(1) Wash and cocainise the bladder according to well-known rules. (2) Fill the bladder with from five to seven ounces of clear fluid. (3) Introduce the instrument. For this purpose the ureter catheter should be pushed down into the internal opening of the canal of the cystoscope; the lid of the latter should be pulled out about one-third inch. (4) As soon as the beak has entered the bladder the catheter should be gently pushed forward into the vesical cavity by about one-half to three-quarters of an inch, and then the lid should at once be pushed back into place, *i.e.*, it should be fully closed. (5) After the interior of the bladder has been satisfactorily inspected and the ureteral openings have come into view, approach one of them. (6) Let the ureteral opening appear at the very end of the cystoscopic picture, farthest away from the middle of the bladder, but keep it under your direct inspection, with the prism as near to it as possible. (7) Push the catheter gently forward; if the beak's direction is a proper one, *i.e.*, if it is parallel with that of the lower end of the ureter, I am sure the ureteral catheter will almost invariably easily enter the mouth, when conducted by a trained hand. (8) Allow the catheter to proceed not more than one or two inches into the ureter, and withdraw the wire mandrel. Then, as a rule, urine will begin to flow drop by drop at intervals or continuously. (From Dr. W. Meyer's paper in the Medical Record, May 1, 1897.)

URINE.—Sugar in the.

Dr. R. T. Williamson referred to the difficulty of detecting with certainty small quantities of sugar in the urine. Every test had some weak point, but by the following combination of tests a definite conclusion could be arrived at easily:—(1) Apply Fehling's test; if no oxide of copper were reduced, or if there were a good reduction and other indications of diabetes were

present, no further test was required. In some cases other indications of diabetes were absent or the reduction of copper was slight. In such cases (2) try the phenyl-hydrazin test, simplified method. (Test-tube filled for half-an-inch with powdered sodium acetate, for half-an-inch with phenyl hydrazin hydrochlorate in powder, and the tube half filled with urine; keep boiling over a lamp for two minutes.) A negative result showed that the substance reducing Fehling's solution was not sugar, and no further test was required. A positive result (deposit which under the microscope consists of yellow needle-shaped crystals in sheaves) indicated glucose; if scanty, possibly glycuronic acid. Lactose yielded small yellow globules, with very short spines. (3) Try the fermentation test for twenty-four hours, using two tubes, one containing the suspected urine, the other normal urine for control, yeast equals one-tenth by volume. Excess of gas in the former tube indicated glucose; a negative result showed glucose to be absent, or less than 0·1 per cent. If the result were negative at the end of twenty-four hours (4) apply Fehling's test to the mixed urine and yeast. If Fehling's solution was no longer reduced, glucose which had been destroyed by the yeast was indicated; if Fehling's solution was still reduced, the reducing substance was not glucose. (British Medical Journal, March 13, 1897.)

GENERAL SURGERY, AND AFFECTIONS OF THE BONES, JOINTS, &c.

ANÆSTHESIA.—Death after Nitrous Oxide.

(By Professor H. A. Hare, M.D.) The following case illustrates the influence which nitrous oxide gas may have when administered to persons suffering from atheromatous blood-vessels. A man between fifty and sixty years of age visited the office of a well-known dentist who makes a speciality of extracting teeth under the influence of nitrous oxide gas, in order that he might have removed one or two molar teeth which were giving him trouble. He had often taken nitrous oxide gas in the same dentist's office on previous occasions, and always without any ill-effects whatever. On this occasion he took the ordinary quantity, his teeth were extracted, and he returned to consciousness with the usual rapidity. He left the dentist's chair and walked to a wash-stand and began to rinse out his mouth with water. While doing this he stated that his right hand felt numb, then complained of the extension of this numbness up his arm,

and rapidly to his leg and side. He was helped to a sofa, where in the course of a very few minutes he became partially unconscious. When I saw him the attack had already been in existence about twenty minutes. He was breathing stertorously, seemed to understand questions put to him, but was unable to answer them clearly, and in the course of a very few minutes passed into absolute insensibility, which, notwithstanding the use of venesection and other measures, deepened into a coma, in which he died about twelve hours after taking the anæsthetic. This case is reported not as a death due to the direct influence of nitrous oxide gas, but as an instance of the fact that the marked rise of arterial pressure which is produced by the administration of this drug during the period of anæsthesia may cause the rupture of a blood-vessel in persons who have a tendency to apoplexy. (Therapeutic Gazette, December 15, 1896.)

BURNS.—Treatment of.

Dr. Paul Tschmarke, of Magdeburg, contributes (*Deutsche Zeitschrift f. Chir.*, vol. xliv, pp. 346-392) an interesting and exhaustive article upon burns and the various ways of treating them. He shows that it is of the greatest importance to keep the injured part aseptic, for the patient may recover from the shock only to die of blood-poisoning. He attributes the shock to a reflex lowering of the blood pressure, which kills by paralysing the heart. His method of procedure in a case where the side of the face and the chest were extensively burnt was as follows:—He thoroughly disinfected the wound at once and then powdered it with subnitrate of bismuth, and covered it with iodoform gauze, kept in place by light bandages. As the bismuth powder is found to irritate the skin and the raw surface, after it has been applied for a few days it must be replaced by boric ointment. Every change of dressing was made in a bath, in which the previous applications were allowed to soak off. (Mr. D'Arcy Power's abstract in Treatment, March 25, 1897.)

CARBOLIC ACID IN ACUTELY SEPTIC WOUNDS.

The following brief extracts of cases show the great potency of pure carbolic, when freely applied, of rendering rapidly aseptic all the parts of an acutely septic wound. In some of these cases the septic process was that of acute traumatic gangrene, and some ounces of the pure acid were brushed over the raw and freely exposed surfaces. In each instance in which it was employed improvement set in immediately after the application :—*Case I.*—Extensive laceration of foot by railway accident ; amputation ; traumatic gangrene ; free application of pure carbolic acid ; cessation of septic process ; cure.

Case II.—Extensive tuberculosis of hip-joint ; accute suppuration ; amputation at hip ; acute inflammation and sloughing of wound ; free application of pure carbolic acid ; cessation of septic process ; cure. *Case III.*—Extensive laceration of foot ; acute traumatic gangrene ; free application of pure carbolic acid ; immediate cessation of septic process ; cure. *Case IV.*—Extensive laceration of forearm and hand ; amputation ; acute gangrene of stump ; free application of pure carbolic acid ; immediate cessation of septic process ; cure. I could add other cases to those briefly narrated above to show how powerful is the germicidal effect (for such I believe to be the action) of pure carbolic acid in all kinds of acute septic cases, whether these be of the nature of acute abscesses, of acute gangrene, or of septic inflammatory processes connected with malignant disease. There appears to be no pain connected with the application of the acid except so far as is entailed in the mechanical manipulation of the wound and its surfaces. When sloughs exist these should be practically soaked in the acid. On the living tissues the acid appears to have no deleterious effect ; if allowed, however, to run over the skin it excoriates and causes pain. (British Medical Journal, June 12, 1897.)

FRACTURES.—Treatment of.

Dr. Gwilym Davis thus summarizes his conclusions :—(1) It is my belief that massage and passive motion is not used to the extent that it should be in the treatment of fractures. (2) That immobility of the fractured ends favours quick union with little deformity. (3) That there are some cases in which, owing either to peculiarities of the fracture or the impaired constitution of the individual, the tendency to the formation of callus is marked. Motion in these tends to the formation of exuberant callus and deformity. (4) There are others in which bony union is unduly delayed ; disturbance of the fractured ends in these hinders union. (5) It is wise to wait until the fractured parts are glued together, usually eight or ten days, before attempting any except the lightest massage, and any extensive passive motion after that time should be used carefully but diligently. (6) Passive motion and massage when first attempted should be of the most gentle character, and not so violent as to disturb the relation of the broken bones. (7) Any marked pain and inflammatory reaction following passive motion and massage is evidence that it has been too violent. (8) The limb should receive massage and manipulation at each inspection or change of dressing, often daily. (9) That in some cases it is advisable to administer such massage as is possible without removing the splints. (10) That persistent stiffness, particularly in fractures

or injuries of the wrist, is often due to a rheumatoid affection locating itself in the injured region. Massage is valuable in the treatment of such. (11) Massage should be given to that part of a limb beyond the seat of fracture to preserve it in a normal condition. (12) Such dressings and methods of treatment should be adopted as will allow the greatest use of massage and passive and active movements consistent with proper retention of the fragments. (Annals of Surgery, 1897, p. 697.)

GANGRENE, ACUTE SPREADING.—Successful Treatment with Antistreptococcus Serum.

Steele (*British Medical Journal*, December 19, 1896, p. 176) has reported the case of a girl, a year and a half old, who was accidentally burned on the calf of the left leg with a red-hot poker. The wound was dressed with linseed oil, but would not heal, and the child's health became impaired. In the course of sixteen days a red spot appeared at the centre of the forehead and a small abscess on the left lower eyelid. The lesion upon the forehead increased in size and assumed a gangrenous character, an offensive discharge took place from the nostrils, and profound constitutional symptoms appeared. Ulceration took place at the site of the burn on the leg. The gangrenous portions of the wound on the forehead were cut away, and nitric acid was applied with a mop; the ulcers on the eyelid and the leg were curetted and also touched with nitric acid. Improvement failing to take place, these operations were repeated, and again were unattended with permanent good results. The general condition was rather worse than better. At this time, after the lapse of almost a month, five cubic centimetres of antistreptococcus serum were injected beneath the skin and strychnine and brandy administered internally. In the course of a week distinct improvement was noticeable, although suppuration took place in the right elbow-joint, demanding incision and drainage. Perfect recovery ensued ultimately. (Medical Record, January 16, 1897.)

HANDS, DISINFECTION OF THE.

After a critical study of the literature on this subject, and an exhaustive series of carefully conducted experiments, Fürbinger and Freyhan (*Deutsche med. Woch.*, February 4, 1897) conclude that the concensus of opinion and evidence shows that it is practically impossible to sterilise absolutely the hands with soap and water, even in conjunction with ordinary antiseptics, but that sterilisation is more nearly approached, *cæteris paribus*, the more alcohol is employed in the process. The procedure advocated is the washing with warm water, soap, and brush for five minutes, rinsing in sterilised water, washing in alcohol for

five minutes, washing in sterilised water, with or without a further washing in an ordinary antiseptic solution. The action of the alcohol their experiments show to be threefold :—(1) Its bactericidal action. (2) Through its properties of dissolving fats and mixing with water it prepares a way, not only for its own germicidal action, but also for that of any subsequent antiseptic. (3) It loosens the epidermis, and with it the dirt and contained bacteria, washing them away. (American Journal of Medical Science, April, 1897.)

HIP, DISLOCATIONS OF THE.

Treves (*System of Surgery*, vol. i, p. 1006) tabulates as follows the methods of treatment by manipulation of the four common dislocations of the hip :—(1) Flex the thigh in adduction in the dorsal and sciatic dislocations. Flex the thigh in the abducted position in the obturator and pubic dislocations. The object of the flexion is to relax the Y-ligament. (2) Abduct and rotate outward in the dorsal and sciatic dislocations. These manipulations cause the head of the bone to retrace its steps through the capsular rent, and relax the short rotator muscles. (3) Extend in all cases. This causes the head of the bone to enter the acetabulum. (Medical Record, April 24, 1897.)

HIP-JOINT, WYETH'S AMPUTATION AT THE.

In the *Annals of Surgery* for February, 1897, Dr. Wyeth, of New York, gives an account of his method which has been in vogue for some years, together with a statement of results. The great value of his procedure is that next to no blood is lost. The chief danger of amputation of the hip joint, for whatever condition it may be performed, but especially for hip-joint disease in children after a prolonged and exhausting suppuration, is that of hemorrhage. Now Wyeth's method absolutely controls this. After an Esmarch's bandage has been applied, two steel-wire needles or skewers, three-sixteenths of an inch in diameter and ten inches long, are employed. One of these is introduced one-fourth of an inch below the anterior superior spine of the ilium and slightly to the inner side of this prominence, and is made to traverse superficially for about three inches the muscles and fasciæ on the other side, emerging on a level with the point of entrance. The second needle is thrust through the skin and tendon of origin of the adductor longus muscle half-an-inch below the crotch, the point emerging an inch below the tuber ischii ; the points should be shielded at once with cork to prevent injury to the hands of the operator. No vessels are endangered by these skewers. A mat or compress of sterile gauze about two inches thick and four inches square is laid over the femoral artery and vein as they cross the brim of

the pelvis, and over this a piece of strong white rubber-tubing, half-an-inch in diameter when unstretched, and long enough when in position to go five or six times round the thigh, is now wound very tightly round and above the fixation needles and tied. If the Esmarch bandage has been employed it is now removed. Excepting a small quantity of blood between the upper limit of the Esmarch bandage and the constricting tube the extremity is bloodless and will remain so. In the formation of the flaps the surgeon must be guided by the condition of the parts within the field of operation. (Treatment, March 25, 1897.)

MALIGNANT GROWTHS.—Bacterial Therapy of.

Peterson (*Therapeutische Monatshefte*, January, 1897), after a review of the literature bearing upon the bacterial therapy of malignant growths, states that cases treated in Czerny's clinic warrant the following conclusions:—The treatment is absolutely worthless as applied to carcinomas. Very exceptionally sarcomas apparently disappear. The treatment itself is dangerous. (Therapeutic Gazette, March 15, 1897.)

POTT'S DISEASE.—Treatment by Forcible Reduction.

M. Calot, of Berck, in a recent communication to the Paris Academy of Medicine, published in the *Annales de Chirurgie et d'Orthopédie* for December last, states that he has performed the operation of forcible correction of the bosse thirty-seven times without an accident, and with the happiest results. After chloroformisation the child is placed face down, and while the assistants make traction on the extremities the operator presses down upon the bosse with all his strength. Snapping sounds are heard and the deformity in recent cases disappears within a couple of minutes; calculosities are excised, and in the severe cases the spinous processes over the bosse are removed. The improved position is maintained by the application of a strong plaster jacket, including the head and pelvis as well as the trunk. This is allowed to remain three or four months, and is followed by a second and sometimes by a third; after this, consolidation is said to be complete, and the child is permitted to go about with an ordinary plaster corset. The patients treated in this manner have ranged from 2 to 20 years of age, and their deformity has lasted from three months to eight years. There have been no deaths, and in only one case symptoms of paralysis, which disappeared after the adjustment of a stronger jacket. In two cases abscess followed; on the other hand, in three cases in which abscess was already present, these were absorbed. In projections of moderate size with a duration of from four to eight months, the deformity entirely

disappeared ; in the severe deformities, with a duration up to six years, the results were often nearly perfect and always surprising. In the few cases in which it was not satisfactory, the operation was followed by a cuneiform resection of the spinal column, which permitted considerable further correction. M. Calot considers the method by forcible correction the ideal treatment, since the vertebral bodies are completely relieved of pressure, and claims that all beginning cases can be cured without deformity. To deliberately break through and tear open a tuberculous focus has never been considered good surgery ; in the light of our present knowledge it seems amazing that serious results have not followed such a procedure, especially when we recall the many recorded cases in which general or meningeal tuberculosis has followed the most trivial interference. The author does not state how much time has elapsed since the observations ; evidently a period of several years, and a much larger experience would be necessary to justify such confident and sweeping statements. We also miss tracings and photographs showing the amount of the deformity and of the improvement effected. Still sober conservatism has received many rude shocks in the past and is probably destined to receive more, and we shall do well to await further and more detailed reports. While earnestly hoping that the experience of experts may result in a radical improvement of present methods, we cannot but counsel the extremest caution. (From Dr. Henry Ling Taylor's article in Pediatrics, April 1, 1897.)

SULPHUR IN SURGERY.

(By Mr. A. G. Miller.) Sulphur may be thus applied :—(1) On an open surface, whether of a recent wound (as at an operation) or of an ulcer, the sulphur, in fine powder, should be gently rubbed in with the finger, and the wound or sore dressed with an antiseptic dressing. No effect is produced on the surgeon's finger whatever. (2) In the case of an abscess, or other septic or tuberculous cavity, the sulphur is injected suspended in glycerine (℥i to ℥i). The consequences may be thus described :—First, a slight burning pain ; next, a strongly smelling discharge (from the gaseous products of the sulphur) ; third, a slough, varying according to the character of the wound (recent or granulating) and the amount of sulphur applied ; and, lastly, there is the therapeutic (germicidal) action. The burning feeling, if complained of, can be mitigated or removed by cocaine. As a rule, when the slight slough produced by the sulphur separates (in a day or two) healthy granulations are manifest, and I have not infrequently seen sores heal in a week or two that had resisted all other treatment for months. (The Practitioner, February, 1897.)

AFFECTIONS OF THE SKIN, &c.

BALDNESS.

(By M. Sabouraud, *Ann. de Dermat. et. de Syphilig.*, March, 1897, p. 257.) This article is written with the clearness and directness characteristic of the author, but with an air of assertion that is less praiseworthy. It may suffice to give the conclusions which are arrived at. (1) The specific micro-bacillus of seborrhœa oleosa, when it gains access to one of the pilo-sebaceous follicles, produces within it four constant results :—(*a*) Hypersecretion of sebum; (*b*) hypertrophy of the sebaceous gland; (*c*) progressive atrophy of the papilla; (*d*) death of the hair. These phenomena result from seborrhœic infection either of the so-called smooth parts of the skin or of the hairy areas. (2) In the hairy scalp this infection chooses as its favourite site the vertex, and the depilatory effect of the seborrhœa produces the baldness. Ordinary baldness is, therefore, nothing else than seborrhœa oleosa of the vertex, which has assumed a chronic form. Seborrhœic infection is not only indispensable to the production of baldness, but this infection continues as an intense, pure, and permanent condition even when baldness is clearly and definitely established. (3) Ordinary baldness is, therefore, a perfectly well characterised disease due to a specific micro-organism. The treatment which has had the best results in the experience of the author is shortly summarised as follows :—Three times a week, in the evening, apply to the affected skin a pomade containing sulphur, oil of cade, and yellow oxide of mercury. On the following morning have the skin thoroughly washed with soap, and subsequently apply a solution containing equal parts of alcohol and ether, in which resorcin has been dissolved to the extent of 2 per cent., by means of a brush. (From abstract in Practitioner, May, 1897.)

ECZEMA IN CHILDREN.—Treatment of.

(L. Duncan Bulkley, *Archives of Pediatrics*, February, 1897.) According to Bulkley, eczema is predisposed to either by a faulty nutrition of the tissues, inherited or acquired, or a faulty action of the deeper layers of the skin arising from dietetic, assimilative, and neurotic causes, or climatic and hygienic external agencies. Dentition will not induce an eczema primarily, but reflexly it occasions recrudescences. The exciting causes he does not discuss, except to insist that local irritants, though capable of exciting an inflammation, cannot produce a true eczema except in subjects properly predisposed. He relies mainly on constitutional treatment, including diet and hygiene, to bring about a cure and prevent recurrences. The quantity and quality of the food and drink, its mode of preparation, and the time and

method of its consumption, must be regulated. Mild laxatives and remedies that promote elimination of solids and liquids by the urine are of advantage, but tonic treatment should pervade all treatment. Arsenic pushed to full doses acts well in a few cases. Locally protection and soothing applications are called for, yet the attendant is often led away after a will-o'-the-wisp in ordering stronger and stronger remedies to allay irritation. Well-prepared oxide of zinc ointment is bland and protective, so is subnitrate of bismuth ointment, but rather more astringent. (Dr. Colcott Fox's abstract in Treatment, April 8, 1897.)

ICHTHYOL.—Eruption produced by the Application of.

(By J. C. McGuire, M.D., *Medical Record*, New York, October 17, 1896, p. 555.) *Case 1.*—A scaly eruption of several weeks' duration on the back of the hands and wrists was treated with a mild ichthyol salve. Within forty-eight hours one hand and wrist got much worse and caused much itching. Dr. McGuire, unaware of the previous treatment, ordered an ointment containing 15 per cent. of ichthyol in lanolin and water. The next day the parts were more swollen, and exuded serum from many ruptured vesicles. Pain and burning. Lotions and dusting powders were substituted. Within twenty-four hours the parts were looking even more angry and inflamed. An acute vesicular eruption had appeared on the face. The exudation was so great that the features were almost obliterated ; the nose and lips were enormously swollen, and the eyelids completely closed. With the consent of the patient the same ointment was applied to the unaffected hand and wrist, when the same phenomena occurred within three weeks. *Case 2.*—A week before seeing the author an ichthyol ointment had been ordered for a severe sprain of knee due to a fall from a bicycle. The ointment had also been rubbed by the patient above and below the knee and over the calf. The skin was intensely inflamed from the middle of the thigh to the ankle, and there was much serous exudation. The face was very much swollen, the eyelids almost closed. On the right thigh and leg a few discrete vesicles were noticed. The itching was intense. Cooling lotions and dusting powders were ordered. Two weeks after the first appearance of the rash there was hardly a sign of it left, but the itching still persisted. Patient hysterical and nervous, due to worry and loss of sleep caused by the eruption. (Dr. George Pernet's abstract in the British Journal of Dermatology, December, 1896.)

INTERTRIGO.—Treatment of.

The intertrigo, from my point of view, requires only cleanliness, separation of the affected surfaces by absorbent cotton, and

a desiccating powder containing boric acid or some mild antiseptic. When a dermatitis exists, then general antiphlogistic remedies are called for. All sources of local irritation should be removed, cleanliness strictly enjoined, the bowels and other functions should be attended to, a suitable regimen for the patient enjoined; whatever internal medication is required should be given, and every precaution taken to limit the extension and existence of the process. Locally, lotions such as the lotio plumbi et opii, diluted one-half, can be used, or one of magnesia carbonate and zinc oxide, aa grs. 15 to water one ounce, or salicylic acid and boric acid, or tannic acid ointments, &c. If it is an eczema that we are dealing with, then the treatment will have to vary according to the patient's condition of health. Regulation of the diet, of the digestive functions, &c., administration of alkaline mixtures, of tonics, &c., &c., are then as much called for as when the disease affects any other part of the cutaneous surface, and recourse must be had to some one or all of the multitudinous procedures in use for the cure of eczema. Dermatitis seborrhoica requires, on the other hand, no internal medication, no matter how extensive it may be. Resorcin, 1 to 2 per cent., sulphur, 5 to 10 per cent. ointments, are all that are required, or a ½ to 1 per cent. solution of pyrogallic acid in alcohol may be used. For the last type described the best remedies I have found have been ichthyol, pyrogallic acid, rhubarb, and formalin, externally applied. Internal treatment I have never found to be of any influence pro or con upon the process. (From Dr. G. T. Elliott's paper in Pediatrics, May 15, 1897.)

LUPUS, TUBERCULIN IN.

Campana (*Il Policlinico*, February 1) finds that tuberculin gradually applied is never hurtful, and that it is useful in resolving lupous or tuberculous infiltrations of long standing. Before applying tuberculin, it is necessary to get rid of any septic phenomena which may be present. It is inefficacious in the case of very extensive alterations with advanced caseification. The use of the thermo-cautery at the same time is advisable to destroy any nodules as soon as they appear. In the case of external localisations of tubercle, the author advises tuberculin as well as surgical treatment where this is applicable. (British Medical Journal Epitome, May 15, 1897.)

RINGWORM OF THE SCALP.—Treatment of.

We may conclude that of all the remedies used upon seventy-five cases, the preparations of mercury have proved the most efficient. Of the others, iodine, naphthalin, salicylic acid and

chrysophanic acid seem worthy of further trial, while croton oil, properly used, is as valuable as electrolysis in eradicating the last traces of the disease. The results obtained at the New York Skin and Cancer Hospital in the treatment of ringworm of the scalp, finally, give full corroboration to the recent dictum of Wickham :—"No matter what methods are employed, the duration of treatment necessary to the thorough cure of ringworm of the scalp cannot practically be reduced to less than eight months." (From Dr. H. A. Pulsford's paper in Journal of the American Medical Association, January 9, 1897.)

URTICARIA GIGANS, OR FUGITIVE ŒDEMA.

Cases frequently come before us in which the patient says to us that at intervals swellings occur in different parts of the skin. These swellings have a special affinity for the face, especially attacking the lips and eyelids, and will often be as large as the hemisphere of an orange. They occur also in other situations, such as the soles of the feet, palms of the hands, neck, and have been observed on the trunk and limbs. The lumps appear quite suddenly, and without warning. They cause a good deal of tight, uncomfortable feeling, and itch. The colour varies from a pink to a dusky red. They feel firm to the touch, and if stretched are whiter than the adjacent skin. When they attack the lips or the eyelid they cause considerable disfigurement, the individual looking like one who has been stung by a wasp. The swellings are not confined to the skin, but may appear in any part of the mucous membrane of the mouth, palate, or pharynx. When they occur on the tongue a blister sometimes ensues, which is very painful, and continues painful until it bursts, and some glairy, salt-tasting fluid escapes. The vulva may be the seat of the swelling, and on one occasion it has been noticed on the glans penis. Great comfort, however, follows the bathing of them with a solution of cocaine. Cold water used either as a compress or as a douche also diminishes the feeling of heat and tension. Cases of fugitive œdema which occur with any regularity will sometimes be cured by giving hydrobromate of quinine, or, to speak more accurately, their recurrence will be avoided. Others will disappear under the influence of atropine. In all cases it is wise to prohibit the eating of fish, eggs, or uncooked vegetables. Notwithstanding all our efforts, we shall find the condition which we are discussing ranks as one of the most intractable and troublesome with which we have to deal. (From Dr. Tom Robinson's paper in the Medical Press and Circular, March 10, 1897.)

AFFECTIONS OF THE EYE, EAR, THROAT, &c.

DEAFNESS IN DIPHTHERIA, NERVOUS.

A case was reported by Dr. J. C. Wilson, of Philadelphia, of follicular tonsillitis in an adult. There had been moderate fever, occipital headache, *tinnitus aurium et cerebri*. On the fourth day dense follicular exudate was observed on the right tonsil, with conjunctivitis, increasing tinnitus, and deafness. An injection of diphtheria antitoxin serum was given, followed in a few hours by total deafness with slight vertigo, and great chemosis. A gradual deservescence occurred, and was completed by the thirteenth day, at which date there was partial paralysis of accommodation, together with paresis of the extensor muscles of the head, persistent tinnitus, slight vertigo, and absolute persistent loss of hearing. The paper also discussed the rarity of the case, its importance, the bearing of the antitoxin injection to the development of the sequelæ, the general subject of sudden nervous deafness in the infections, and the general question of diagnosis, prognosis, and treatment. (Medical News, May 8, 1897.)

EAR DISEASE, NON-SUPPURATIVE MIDDLE.—Operative Treatment of.

It seems that operative interference is not beneficial in sclerosis (cases in which deafness is extreme, with little or no change in the membrane). The cases which appear to yield the best results are those in which the drum is markedly retracted and changed, the fixation being more or less limited to the membrane itself and the two larger ossicles. According to our present lights, before operating, all other methods of treatment should first be given a good trial; if these fail, the facts of the case should be laid fairly before the patient, who probably would not consent to operation unless the hearing was extremely bad in both ears, interfering seriously with business or pleasure, or unless the tinnitus was such as to make life a burden. The risk of being made worse by the more radical operation should especially be laid before him. The difficulty then lies in the choice of operation. Posterior plicotomy, multiple incisions, tenotomy of the tensor, section of adhesions, section of the anterior ligament of the malleus, and such smaller operations, may be tried first if definite indications exist. With regard to more radical measures, it certainly should be laid down as a law that an exploratory opening should first be made. If no improvement results, the likelihood of doing any good by further interference is so small as to warrant one in saying that nothing more should be done. If improvement occurs, some-

thing more must be done; and until some method is devised for keeping an opening patent by simple means, two paths are open:—(1) To remove the drum and part or whole of the malleus, or malleus and incus, with subsequent removal of a cicatrix, and mobilisation or extraction of the stapes if thought necessary; and (2) to direct attention to the stapes and oval window, by dislocating or removing the incus, which serves the same purpose as removal of the membrane, malleus, and incus, as far as fixation of these and effects of pressure are concerned; then to mobilise the stapes by dividing adhesions, removing exudation, dividing the stapedius, and by direct movement; and finally, if necessary, to remove the stapes. It is apparently towards these two paths that future discussion will be directed. Finally, no operative interference should be undertaken without strict antiseptic precaution. (From Mr. Arthur H. Cheatle's summary in the Practitioner, May, 1897.)

HOLOCAIN IN EYE SURGERY.

Yet another local anæsthetic is reported, and as with the others it is at the outstart highly lauded. Dr. Kuthe's investigations (*Centralbl. für Augenheilkunde*, February, 1897) extend over a large number of patients, and show that the instillation of a 1 per cent. solution of holocain into the eye causes anæsthesia of the ocular surface in fifteen seconds, which lasts at least for ten minutes. The instillation can be kept up for lengthened periods without giving rise to the desiccation of the corneal epithelium, which is so frequently observed under the prolonged use of cocaine. Holocain would seem to have no effect on the pupil or tension. Judging by experiments on rabbits, holocain is not poisonous except in very large doses, when it gives rise to cramps, muscular spasms, &c. The original title of the drug is "Diathoxyathenyldiphenylamidin," which pretty well fulfils Mark Twain's definition of an "Alphabet in perspective." (From Dr. J. W. Stirling's abstract in the Montreal Medical Journal, May, 1897.)

IRIS.—Implantation Cyst of.

Mr. Whitehead, F.R.C.S., reports a case, and makes the following remarks:—Implantation cysts of the iris arise subsequently to injury or operation by the transplantation of corneal or conjunctival epithelium or eyelashes into the iris or anterior chamber. An eyelash becomes the starting point of an opaque cyst containing cholesterin and fat globules, whereas from the epithelium a semi-transparent thin-walled cyst originates. That these cysts are true implantation cysts was first recognised in 1869 by Hulke, who regarded them as originating from a portion of Descemet's membrane, torn away from the back of

the cornea by the penetrating foreign body, and carried before it into the iris. Masse, however, in 1881, by grafting pieces of conjunctival and corneal epithelium into the eyes of rabbits, was able to produce artificially cysts of the character above described, and thus demonstrate the true source of origin. The treatment of these cases is very difficult, and the results not very encouraging. Nothing short of complete removal of the cyst, together with the adherent iris, will effect a permanent cure. In such a case as the one above described, this would not have been possible except by such a wholesale removal of the iris and ciliary region as would have caused subsequent shrinkage of the globe. If the cyst is too large for complete removal and glaucoma sets in, the only course open is the complete removal of the eyeball. (British Medical Journal, March 20, 1897.)

IRITIS.—Treatment of.

The chief treatment is the use of atropine, which should be administered both early and late, and in sufficient strength to thoroughly dilate the pupil, and at such frequent intervals as to maintain the dilatation. In the early stages the use of a solution of four grains to the ounce of the sulphate of atropine, applied every four hours, or even more frequently, is necessary to bring about this result. I have found good effects from combining cocaine with the atropine in the earlier stages; it lessens the pain and aids in the more rapid dilatation of the pupil. After full dilatation has been obtained the cocaine may be dropped, but the use of atropine, until all inflammation of the iris has disappeared, is absolutely imperative. In uncomplicated cases, which are seen at an early stage, the progress is very favourable. With neglected cases, complications are very liable to occur. The most simple is posterior synechia, which is altogether too frequently seen in eye-clinics, but it is unnecessary at this time to more than refer to the fact that most serious complications are more liable to follow neglect or maltreatment. (From Dr. L. F. Love's paper in the Medical News, January 9, 1897.)

NASAL DEFORMITIES.

The author does not believe that simply because a nasal sæptum is slightly deflected, or is not symmetrical, it must of necessity be operated upon. It is only when one or more of three conditions are present that surgical interference should be thought of and used. These conditions are as follows:—(1) When the respiratory function of a nasal fossa is seriously impaired or entirely lost. (2) When drainage of the secretions from the mucous membranes lining the accessory sinuses or nasal fossæ is impeded. (3) When there is contact of the sæptum with adjacent structures that can not be overcome

by simple methods, such as cauterization, snaring, curetting, and trephining with the electro-motor. A simple enumeration of the symptoms that are produced by the foregoing conditions are :—(*a*) Mouth breathing, caused by occlusion of one or both nasal fossæ ; (*b*) drainage of the secretions of the accessory sinuses and nasal fossæ into the postnasal space ; (*c*) perverted secretion or supersecretion in the nasal cavities ; (*d*) headaches, frontal and occipital ; (*e*) diseases of the accessory sinuses ; (*f*) catarrh of the Eustachian tubes ; (*g*) chronic rhinopharyngitis and laryngitis ; (*h*) rhinitis vasomotoria periodica ; (*i*) asthma, reflex ; (*j*) spasmodic stricture of the œsophagus, reflex ; (*k*) epilepsy, reflex ; (*l*) chorea, reflex. (From Dr. Hoyle Butts's paper in the New York Medical Journal, May 22, 1897.)

RETINITIS, ALBUMINURIC.

Summing up briefly, the chief conclusions arrived at are :—(1) Albuminuric retinitis affects both acute, chronic, and lardaceous cases, especially chronic interstitial and chronic tubal, and the latter relatively more often. (2) Both eyes are affected at one time or another. (3) Sex, age, and occupation have no special import. (4) The white spots may depend on : (α) coagulation of filmy extravasation ; (β) fatty transformation of serum ; (γ) decolorisation of blood-clots ; (δ) fatty degeneration of Müller's fibres ; (ϵ) œdema of nerve-fibres ; (ζ) sclerosis of nerve-fibres ; (η) diapedesis and collections of white corpuscles. (5) The hemorrhages are most likely due to the morbid state of the blood, and to the pressure on the vessels by the deposit in the retina. Increased arterial tension and hypertrophy of the heart probably play merely subordinate parts. (6) The optic neuritis is often associated with conspicuous symptoms of cerebral disturbance, and though the cause is mostly obscure, an inflammation extending from the meninges may possibly explain some cases. (7) In the present state of our knowledge we are not justified in attributing the retinal symptoms to the influence of the sympathetic. (8) The main factor in their causation is probably the dyscrasia of the blood. (9) This dyscrasia depends on the number of the red and white corpuscles, and in a minor degree on the amount of hæmoglobin rather than on any uræmic condition. (10) In acute nephritis, and in early cases of pregnancy, the retinitis often disappears with the albuminuria, but in later cases of pregnancy it often persists and attends a fatal issue. (11) In chronic nephritis, as regards prognosis, the retinitis is of far greater value in the tubal cases than in the interstitial. (From Dr. C. R. A. Sutton's paper in the Guy's Hospital Reports, vol. lii, p. 170.)

SCOPOLAMINE.

Dr. Oliver comes to the following conclusion :—(1) Hydrobromate of scopolamine is of the greatest value in the local treatment of the various forms of plastic iritis. (2) The primary reparative action and quieting power of hydrobromate of scopolamine, as compared with those of similar doses of sulphate of atropine in the treatment of plastic iritis are much more promptly obtained with the former than with the latter drug, this being true in the majority of cases even when the latter drug is used in dosages that are equal to quadruple or quintuple the strengths that are employed of the former drug. (3) The duration of the healing and soothing powers of hydrobromate of scopolamine as compared with those of equal doses of sulphate of atropine in cases of plastic iritis does not seem to be so lasting with the former as with the latter drug, this being true in the majority of cases, even when the latter drug is used in four or five times the strength-doses as the former. (4) For quick and active measures, which are so eminently necessary in incipient cases of plastic iritis, and during the early stages of inflammatory reaction, hydrobromate of scopolamine is to be preferred to sulphate of atropine. (5) Where prolonged use of such drugs is necessary, as in many cases of the chronic form of the disease with subacute exacerbations, the alternate employment of hydrobromate of scopolamine and sulphate of atropine seems empirically to be the best method of local administration that has been devised. (6) As clinically employed, the best salt of the alkaloid seems to be the hydrobromate; the best method of instillation appears to be that which is accomplished by dropping the solution upon the upper corneal limbus whilst the lower punctum is everted and the corresponding canal-iculus is pressed upon ; and the most efficient amount to be used at one sitting is two drops of a one-tenth of 1 per cent. strength (1 to 500), repeated, if necessary, as often as three times during the course of an hour, and preceded, when desired, as in some instances where there are much irritation and pain, by two drops of a 2 per cent. solution of hydrobromate of cocaine a few minutes before each instillation of the scopolamine. (American Journal of Medical Science, 1896, p. 544.)

TYPHOID FEVER.—Eye Complications in.

In most infectious diseases the eye, if affected at all, is involved more frequently in the early stage or even in the prodromal period, but this is not so in typhoid fever ; and this fact sometimes helps to a diagnosis, as in doubtful cases of measles. In typhoid fever, simple or complicated, the occurrence of eye symptoms seems to be either a part of the infectious disease itself or among its sequelæ. Generally speaking, if an acute

infectious disease begins with severe symptoms of general poisoning, an acute state of degeneration, resembling a scorbutic condition, seems to be developed, and hemorrhages may occur very quickly in different organs. This is true of typhoid fever, and one of the symptoms met with in severe cases of this disease is retinal hemorrhage. The same may also be said in regard to the cause of the appearance of herpetic vesicles on the cornea, though this is a rare symptom in typhoid fever. In cases of infectious disease of a low type and more chronic character, the walls of the blood-vessels undergo degeneration, the condition being known as endovasculitis and perivasculitis, and is due to inflammatory changes in the small arteries and capillaries. This condition is met with generally throughout the body, and is visible in the eye in the retina, where it gives rise to hemorrhages. In typhoid fever various lesions may occur in the eye, not only during the height of the disease, but also during the period of convalescence. These lesions may be enumerated as follows, in the order of frequency :—(1) Conjunctivitis, (2) phlyctenular conjunctivitis and keratitis, (3) loss of accommodation and dilatation, (4) retinal hemorrhages, (5) paralysis of external muscles, (6) neuro-retinitis or retrobulbar neuritis, and (7) inflammation of the uveal tract. (From Dr. C. S. Bull's paper in the Medical Record, April 24, 1897.)

OBSTETRICS AND GYNÆCOLOGY.

ABORTION, INCOMPLETE.

The following is taken from H. Jellett's paper in the *Dublin Journal of Medical Science*, May, 1897 :—There are, I think, three general indications for the exploration of a pregnant uterus in the early months :—First, if the patient has lost so much blood from the uterus that we consider it undesirable that she should lose any more. Secondly, if any portion of the ovum has come away, whilst the remainder of it is retained *in utero*, *i.e.*, if it be a case of incomplete abortion. Thirdly, if the ovum be manifestly dead, but be not expelled—*i.e.*, if it be a case of missed abortion. In the presence of these indications, our line of treatment is clear ; in the absence of them, we adopt the expectant treatment, with the object of clearly ascertaining the nature of the case. Taking the foregoing indications as true, the crucial point lies in the correct diagnosis of the condition of affairs present. How can we decide whether the case be one of threatened, complete, or incomplete abortion ? There are three points which help us to arrive at a conclusion : —First, the nature of the matter which has been expelled from the uterus. Secondly, the total cessation or the continuance of

hemorrhage. Thirdly, the shape of the cervix. Of these three, by far the most reliable is the first, if we examine all that has come away. By so doing we can, in the majority of cases, decide at once if we be dealing with a case of abortion, and, if so, what particular variety it is. I repeat again, if we be dealing with a case of abortion, as it not uncommonly happens that what we believe to be such a case is in reality a case of extra-uterine pregnancy, the fact that the hemorrhage has or has not ceased is a very negative sign. If the hemorrhage continue we may be sure that the uterus is not empty. On the other hand, its cessation is by no means an absolute proof to the contrary. Then, as to the shape of the cervix—this is altered accordingly as the internal or external os is contracted or dilated. In a case of threatened abortion the internal os is usually more dilated than the external, as is shown by the widening of the cervix at the cervico-vaginal junction. In a case in which the ovum has been expelled the opposite condition is found—*i.e.*, the external os is usually more dilated than the internal. This, also, is a negative sign; as, in some cases, when a portion of the ovum has been expelled the internal os contracts again after its expulsion.

ALBUMINURIA AND LACTATION.

(By M. Gamulin, *Arch. de Gyn. et de Tocologie*, November, 1896). Can or should a woman nurse her child if she has suffered from albuminuria during pregnancy, and is obliged to continue the milk treatment during the puerperium on account of the persistence of albumin in her urine? Most physicians forbid nursing under such circumstances on the ground that both mother and child would suffer. The mother would be enfeebled and albuminuria would not disappear so rapidly, and the child would probably suffer more or less from malnutrition. Gamulin opposes this view, and proves from the statistics of the Baudelocque Clinic where the mothers nurse their own children, that no evil results have followed, but, on the contrary, the mothers improved in health, and the albuminuria disappeared completely while they were upon a rigid milk diet. Their children thrived and grew, though not so fast as those of quite healthy mothers. The ultimate test of a woman's efficiency as a nurse is the increase in weight of the child. Tarnier has laid down the rule that a daily increase in weight of 20 grammes is the minimum with which we should be satisfied. The average daily gain has been variously estimated by different observers. Bouchard makes it 25 grammes, Bidet 28, Winckel 35, Tarnier and Chantreuil, averaging the averages of other observers, place it at 30 grammes. Winckel has observed that more than 50 per cent. of new born children regain their birth weight by the

tenth day. Of the children of albuminurics in the Baudelocque Clinic, only one in five did not gain 20 grammes per diem, and some reached 35 grammes; two-thirds regained their birth weight by the tenth day, and more than one-half of them by the seventh day. Albumin had disappeared entirely from the urine, or only a trace remained when the mothers left the clinic; in two cases it had increased and in five it remained stationary. From the consideration of these statistics, Gamulin concludes that the children of albuminurics nursed by their own mothers develop and grow as well as other infants, and that the mothers themselves, though kept on a strict milk diet, suffer no ill-effects from nursing their children. He believes, therefore, that every albuminuric mother can and should nurse her child; only in the rare cases when the albumin remains stationary or increases, should nursing be stopped. (Dr. J. C. Cameron's abstract in the Montreal Medical Journal, April, 1897.)

BLADDER, FEMALE.—Spontaneous Rupture of.

Mr. E. O. Croft read notes of this case before the Leeds and West Riding Med.-Chi. Soc. A widow, aged 38, had suffered from piles for five years; these were removed on December 5. There was no subsequent retention of urine, and progress was normal for eight days, when the patient complained of abdominal pain, and said she had felt a twitch in the body while reaching to move her pillow. Abdominal pain and distension continued, and the urine diminished in quantity, though a few ounces were drawn at intervals by the catheter. Temperature remained normal. The patient gradually sank and died on December 17. At the necropsy a large quantity of urine was found in the abdomen. There was no peritonitis, adhesion, or evidence of tubercle or abscess in the pelvis or abdomen. The bladder was empty. On the upper and posterior surface of its peritoneal aspect was found an oval ulcer 1 inch by $\frac{1}{2}$ inch. From its thickened edges it appeared to be of old standing. The base was formed of the mucous membrane of the bladder, and the perforation through this was $\frac{1}{6}$ inch in diameter. Mr. Croft drew attention to the difficulty in diagnosis, owing to the retention by the bladder of some urine after the perforation took place, and also to the peculiarity of the ulceration taking place on the upper surface of the bladder. (British Medical Journal, February 13, 1897.)

CARCINOMA OF THE UTERUS IN A GIRL OF 14.

Dr. W. L. Little (*New Orleans Medical and Surgical Journal*, December, 1896) reports that he was called to see the patient in question on May 15, 1895. She was anæmic, had but little appetite, and every month would complain of headache, back-

ache, and general langour. He diagnosticated the case as one of chlorosis. After treatment, menstruation set in. Soon after this she suffered from menorrhagia and dysmenorrhœa, and subsequently had leucorrhœa. An examination was made, and cancer was suspected. After consultation this diagnosis was confirmed, but, because of extensive adhesions involving the cervix uteri, vaginal walls, and surrounding tissues, operation would have been futile. Later, the tissues began to break down from ulceration and the discharge became more characteristic, the rectal walls becoming implicated. These conditions became more aggravated, until the patient died, on October 23, 1896. (Medical Record, January 2, 1897.

CLIMACTERIC HEMORRHAGES.

Reinicke (*Arch. f. Gynäkologie*, Bd. liii., Ht. 2) states that climacteric hemorrhages are due to arterial sclerosis, in consequence of which the vessels lose their muscular tone and are unable to contract, as they do normally at the time of the menstrual flow ; hence the menorrhagia which is so common at the menopause. When the hemorrhages persist in spite of repeated curettement and the administration of ergot (especially if the drug increases the flow), it is safe to infer that these vascular changes are present, especially if the absence of endometritis, neoplasms, and disease of the adnexa can be excluded. This diagnosis is confirmed if the uterine body is hard and arterial changes are noted in the extremities. Since these hemorrhages are due to sclerosis of the uterine arteries, no effect can be expected from the use of drugs or electricity—in fact, they are usually aggravated by ergot, which is apt to cause venous congestion rather than arterial anæmia. Rest, strict regulation of diet, with the avoidance of alcohol, strong tea and coffee, and the use of laxatives are sufficient in mild cases. Curettement has been advised, but this operation simply opens up the mouths of numerous vessels which are unable to contract, and thus increases the flow. The cause of the hemorrhage is not in the mucosa, but in the muscular substance of the uterus. Dilatation of the cervical canal and intrauterine applications of Monsell's solution are preferable. In obstinate cases in which the patient is really in danger from repeated hemorrhages total extirpation is indicated, the results being quite satisfactory, while the mortality is only a little over one per cent. Castration is not a sure means of relief. This radical treatment should be adopted earlier in the case of working women who cannot rest during the flow. (Dr. Coe's abstract in the American Journal of Medical Science, May, 1897.)

DECIDUOMA MALIGNUM.

At the session of the Vienna Society of Physicians held Jan. 15, Neumann described a case of *deciduoma malignum* occurring during pregnancy in a woman aged 40. The diagnosis was made from the local metastases occurring in the vagina. The uterus was at once curetted, and at the expiration of the puerperal period hysterectomy was performed. Neumann called attention to the necessity of frequently examining a woman in whom an hydatid mole has grown, both during pregnancy and after labour, because such a mole can very easily terminate in a malignant growth. (Medical News, February 27, 1897.)

ECLAMPSIA, PUERPERAL.

Dr. A. Worcester comes to the following conclusions :—(1) It is more important to keep account of the amount of urine excreted by pregnant women than it is to test it occasionally for albumin. And if the amount is scanty, prompt measures should be taken to promote diuresis ; failing which, then catharsis and diaphoresis should be induced. (2) In cases of eclampsia, before term, diaphoresis should be tried before resorting to the induction of labour. Hot air is the safest and most effective means thereto. (3) In cases of eclampsia occurring at term, diaphoresis should be employed while inducing and expediting delivery. (4) The rapid induction of labour by manual dilatation of the cervix is a difficult and dangerous operation, which if combined with forcible delivery of the child is well calculated to add to the shock already caused by the eclamptic attack. (5) In eclampsia, as in all other cases of kidney failure, ether is contraindicated. Surgical anæsthesia is not needed. Chloroform, always the proper anæsthetic in obstetric practice, is imperatively proper in cases of eclampsia. (Boston Medical and Surgical Journal, March 4, 1897.)

FORCEPS.—Indications for Use.

Dr. A. D. Wilkinson (*Western Medical Review*, October 15) submits the following propositions. The forceps are indicated and should be employed :—(1) In all pelves where the diameters are below the normal measurements. (2) When the head is in an immovable position, with chin fixed over the symphysis pubis. (3) When the head is in the superior strait, with chin to the front. (4) When the head is locked at the pubis, but when flexion is imperfect and fixation of the frontal part of vertex is the result. (5) When the face is fixed anteriorly, with chin locked. (6) When the face is fixed laterally. (7) In transverse and oblique positions of head. (8) When the head is laterally rotated and deeply fixed in the pelvis. (9) In great narrowness and rigidity of the soft parts, when the hand cannot

be introduced, or when the fingers soon become exhausted on account of the construction. (10) In too large heads—as hydrocephalus. (11) In placenta prævia and eclampsia. (12) When the extractive methods have been tried and proved insufficient. (13) When the fœtus is dead. (14) When the head has been torn from its trunk. (Medical Record, December 19, 1897.)

GESTATION, ECTOPIC.

In a discussion on this subject, before the Royal Academy of Medicine of Ireland, Dr. W. J. Smyly said that not very long ago ectopic gestation was regarded as a very rare thing, but now the frequency of its occurrence was remarkable. During his late Mastership of the Rotunda he saw a great number of cases of ruptured tubal pregnancy, and he operated in more than a dozen cases of it. It was a great mistake to wait for collapse to pass off before proceeding with an operation. Collapse was the result of the spouting of a severed artery. The duty of the surgeon was then to stop the hemorrhage, and the moment the artery was tied the patient recovered. Another question of interest was as to the proper line of treatment to be pursued when there were hæmatoceles. If the hæmatocele was not a large one his practice was not to interfere with it, because in the great majority of such cases absorption took place, and the patient got well. But in two of his cases putrefaction of the hæmatocele occurred, and though he performed section, and washed the hæmatocele out, it was too late. If they waited until the blood putrefied an operation was of no use, and, therefore, if the hæmatocele were of any size, the safer course was to open the abdomen at once and clear it out. The most interesting cases were those in which the child went to the full term; he had met with a case in which the child died at the full term, and he removed it afterwards, but, generally speaking, the child was not alive anywhere near the term, or beyond the sixth month. His opinion was that it was dangerous to the life of the mother in such cases to wait for the arrival of the full term in the expectation of obtaining a living child. The risk to the mother was enormous, and, generally speaking, such children did not live beyond a month. In one case, in which there was a large six-months' fœtus, there was no putrefaction; in another case, which ended fatally, the child had escaped into the abdomen, and became adherent to the intestines. In other cases there was no putrefaction, and he was able to extirpate the cyst. As to drainage, he did not think it advisable. (Dublin Journal of Medical Science, May, 1897.)

GONORRHŒA.—Treatment by Argentamin.

Gordon, in an exhaustive paper on gonorrhœa in women, read before New York Academy of Medicine, strongly recommends

the local application of argentamin in solution, as an efficient method of treatment. Argentamin (ethylendiamin silver, phosphate solution) is a colourless astringent antiseptic, like corrosive sublimate, although without its coagulative properties on proteids. It is similar in its effects to nitrate of silver, with the special advantage that it does not coagulate albumin ; it does not effect, therefore, the epithelium of the mucosa, and can thus permeate into the tissues and attack the deeply-seated gonococci. A solution of the strength of 1 in 4000 fertilises a pure culture of gonococci in from five to seven minutes. It is well tolerated by mucous membranes ; a solution of 1 in 1000 injected into the urethra is well borne. The treatment by argentamin can be commenced at any stage of the disease, and usually ensures a complete cure within a fortnight, no presence of gonococci in the discharge after this time being discernible. In urethritis, daily injections of 1 in 2000 solution should be given. At first, after the injections, a slight increase of discharge is noted, but afterwards this gradually and rapidly disappears. In vaginitis, the daily local application of 1 in 1000 solution has been found most efficacious ; while in gonorrhœal endometritis, swabbing the uterine cavity with a five per cent. solution is to be recommended. Naturally, in cases of gonorrhœal salpingitis and ovaritis, with their accompaniments of perimetritis and parametritis, the disease has passed beyond the limits of local applications, and the exhibition of the drug is thus useless.—*Medical Record*, N. Y., November, 1896. (Abstract in Edinburgh Medical Journal, January, 1897.)

NEURITIS, PERIPHERAL, IN PREGNANCY AND THE PUERPERIUM.

Dr. Ernest S. Reynolds presented a short communication to the Manchester Medical Society on the forms of peripheral neuritis occurring in pregnancy and the puerperium. He separated those cases obviously due to injury or inflammation of the nerve roots in the pelvis from those of multiple neuritis affecting arms or legs, or both, in which some poison was probably the cause. He pointed out how often in the latter cases there had been persistent vomiting of pregnancy, and related a case in which this had occurred. (British Medical Journal, April 24, 1897.)

OVARINE IN THE TREATMENT OF DISTURBANCES FOLLOWING OOPHORECTOMY AND THE MENOPAUSE.

The *Gazette hebdomadaire de médecine et de chirurgie* for Dec. 13 states that Dr. Mond (*Münchener medicinische Wochenschrift*, 1896, No. 36) reports twelve new cases in which ovarine was

employed, and says that in every case the effect of the treatment was remarkable. There was progressive attenuation of the disturbances from the beginning of the third or fourth day, followed by their complete disappearance at the end of ten or twelve days. The quantity employed was ten tablets a day, each containing 8 grains of fresh ovarine substance. The author advises the employment of large doses in the beginning, which may be progressively diminished and increased again if the dose seems to be insufficient. Dr. Mond states that he has never seen the least symptom of poisoning in any case. In several cases he substituted for the ovarine tablets others which had the same taste, the same colour, and the same appearance, but contained only meat extract and salt. The administration of these tablets was regularly followed by the return of all the troubles. The real ovarine tablets evidently did not act by suggestion. (New York Medical Journal, January 2, 1897.)

PERINEAL LACERATION.—Prevention of.

A very useful plan in some cases is manual extraction of the head between the pains. By watching the opportunity a time comes when the forehead can be just felt through the perinæum about the level of the anus. Extension having occurred thus far, it will be found that the head can be held in that position (and prevented from slipping back as soon as the contraction passes off) by pressing the forehead towards the symphysis with the thumb and finger tips. Then, as soon as the uterine contraction has passed off, by pressing the finger and thumb up into the pelvis on either side of the forehead through the perinæum, and at the same time pulling down the occiput with the other hand, the head can be squeezed out of the vagina just as, to use a familiar instance, an orange pip can be squeezed out from between the finger and thumb. This method has great advantages, because the pressure of the fingers, in the absence of the uterine contractions, can be graduated to a nicety. Of minor remedies hot fomentations applied to the perinæum will sometimes do good, but inunction with vaseline or other lubricant is to be condemned as useless, and as complicating matters by rendering the parts slippery. Forbidding the use of voluntary efforts on the part of the patient is a very useful precaution. Incision of the perinæum is a measure which ought undoubtedly to be employed more often than it is. One is sometimes confronted with a case in which it is reasonably certain that a laceration must occur if the perinæum be left alone. In such a case it is good practice to make a straight cut down the median line with scissors, rather than to leave the case to get a complicated tear such as has been described. It is astonishing how small an incision will enable the presenting

part to pass the perinæum in most cases,—three-quarters of an inch from the fourchette being ample. Such incisions never tear beyond the original limits if the head is handled in the way described above, never produce lacerated and bruised tissues, and certainly heal better and more rapidly than any laceration. Lateral incisions should never be used, for they present no advantage over a single median one, they are more difficult to unite accurately afterwards, and they are apt to be accompanied by a horizontal splitting of the skin from mucous membrane as the head passes. (From Dr. Thos. G. Stevens's paper in the Guy's Hospital Report, vol. lii, 1896.)

PREGNANCY.—Prolongation of.

Sprenkel (*Am. Journ. Obst.*, December, 1896) describes two cases of pregnancy of over 310 and 317 days respectively, which were under treatment in University Hospital, Philadelphia :—*Case* 1.—4-para, whose previous labours, though somewhat delayed, had been easily terminated by forceps. On this occasion, after being in labour for thirteen hours and the fœtus found to have died, craniotomy was performed, and extraction concluded with the utmost difficulty, on account of the size of the child, which weighed 5542 grms. *Case* 2.—5-para ; previous labours normal, had been thirteen hours in labour, and was still undelivered in spite of energetic attempts with axis traction forceps. Delivery was effected by means of Porro's operation, and a female child, weighing 5280 grms., extracted. Sprenkel considers protracted gestation to be a cause of much danger, not only from the difficulty in labour due to the increased size of the child, but also from its predisposing to kidney mischief, accidental and post-partum hemorrhage, and septic infection. The rule followed in the University Maternity is to induce labour, if pregnancy extends beyond two weeks after the date of expected confinement. As to the frequency of protracted gestation, he quotes Winckel's statistics from 20,000 cases, in which 6 per cent. were prolonged beyond the 300th day, and gives the results of examination of 1480 cases at the Preston Retreat and University Maternity, in which pregnancy was continued beyond the 294th day in over 22 per cent. of cases. (Abstract in Edin. Med. Journ., 1897, p. 210.)

PREMATURE LABOUR.

It is proper to induce premature labour in (1) pelvic deformity, when there is sufficient space for a seven-months' child to be delivered without injury. The object is twofold :—(*a*) To save the child's life by obviating the necessity for craniotomy ; (*b*) to spare the mother the dangers of craniotomy, Cæsarean section, or other operation that might be required if the

pregnancy went to full term. (2) In cases in which, in previous labours, the head of the child at full term has been permanently ossified or was unusually large, so that labour has been difficult and dangerous, even though the pelvis was normal. The period of delivery need be only two or three weeks before "term" in these cases. (3) In cases in which the children of previous pregnancies have died *in utero* during the later weeks of gestation from disease (fatty, calcareous, or amyloid degeneration, &c.) of the placenta. (4) In conditions in which the continuance of pregnancy seriously endangers the mother's life —such as excessive vomiting, albuminuria, uræmic convulsions, or paralysis ; chorea, mania ; organic disease of the heart, lungs, liver, blood-vessels, &c., threatening fatal disturbance of the respiration, circulation, and other vital functions ; irreducible displacements of the uterus ; placenta prævia with hemorrhage ; and in dangerous pressure upon neighbouring organs from over-distension of uterus, due to dropsy of amnion, tumours, multiple pregnancy, &c.—A. F. A. King in *Manual of Obstetrics*, p. 307. (Medical Record, January 9, 1897.)

PROLAPSE OF UTERUS AND INCONTINENCE OF URINE.

(By M. Boursier, *Arch. clin. de Bordeaux*, 1896, p. 511.) In a paper upon uterine prolapse, published in the above journal, Boursier states that one of the earliest symptoms of prolapsus uteri is urinary incontinence, which may be either false or true, and with or without pain. It is worse when the patient is in an upright position, straining or fatigued, and disappears on the patient reclining. It is due to some lesion of the urethra, so that some operation for its correction is indicated. (Dr. Lockhart's abstract in the Montreal Medical Journal, May, 1897.)

PRURITUS VULVÆ.—Curability of.

Dirner (*Centralblatt f. Gynäk.*, No. 5, 1897) introduced, by reading a paper on the operative treatment of pruritus, an important discussion on that disease at a recent meeting of the Royal Hungarian Medical Association. He admitted that the diabetic variety was curable ; so was that form of pruritus due to microbes in vaginal or cervical secretion. The intractable cases were clinically and pathologically primary. They represented subacute inflammation of the vulvar integument and fibrosis of the Pacinian corpuscles and other delicate structures. Dissecting off the skin involved in this morbid process, "vulvitis pruriginosa," alone effects a cure. He read notes of two cases, one particularly obstinate, where the patient was 65. He dissected off all the vulvar integument from the mons veneris to the navicular fossa, taking away the clitoris. The wound was sutured with silver

wire, and covered with iodoform collodion. It healed by first intention. After healing there was no tension, though so much skin had been removed. The itching entirely disappeared. Tauffer found that pruritus from germs, secondary to leucorrhœa and endometritis, is very hard to treat. Besides treatment of the exciting cause, free application of sublimate lotion is needed. Diabetic pruritus is certainly difficult to cure. Kézmárszky agreed with Dirner as to a primary prurigo, due to degenerative changes in the skin, and needing operation. He found, contrary to Tauffer, that the secondary forms, pruritus from diabetes and from germs in discharges, yield readily to symptomatic treatment. (British Medical Journal Epitome, March 27, 1897.)

PUERPERAL CONVULSIONS.

Most physicians at the present day resort at once to full anæsthesia by ether or chloroform (the latter is more used abroad, as being more prompt in its action). There are, however, many who, like Dr. Byers, of Belfast, at the recent Congress of Gynæcology and Obstetrics at Geneva, rely on hypodermic injections of morphine to control the nervous hyper-excitability. It is evident that if subcutaneous injections of morphine are used in these cases where the cerebral congestion and coma are often so marked, the utmost circumspection must be employed, for the contrast is plain between the fugaciousness of the chloroform anæsthesia and the long duration and intensity of that produced by morphine. There is an accumulating weight of testimony in favour of pushing the anæsthetic till full relaxation is obtained, and of again resorting to it when any threatenings of convulsions appear. While the patient is under the anæsthetic, there will often be an opportunity to apply forceps and terminate the labour. This will of itself have an effect in opposing the continuance of the convulsions. Where the os is not dilated, attempts may be made to produce full dilatation during the chloroform anæsthesia (by digital manipulation, Barnes' dilators, &c.) : these will often be effectual. Some late authors (and notably Mangiagalli, of Milan) regard the evacuation of the uterus as so urgent a point that they would not wait for dilatation of the cervix when the parts are contracted and rigid, but they would prepare the way for speedy delivery by multiple incisions on the os and cervix. These incisions were first proposed by Dührssen. (From leading article in Medical Press and Circular, January 21, 1897.)

PUERPERIUM, SUDDEN DEATH IN THE.

Goltman (*Memphis Medical Monthly*, April, 1897, p. 145) reports two cases of sudden death during the puerperium, both as

a result of pulmonary embolism, in one secondary to varicose veins, and in the other to cardiac thrombosis. He expresses the opinion that pulmonary embolism is the cause of death in most of the cases of this kind. Among predisposing influences are phlebitis, varicose veins, prolonged labour, hemorrhage, anæmia, sepsis, carcinoma, syphilis, &c. In the presence of peripheral thrombosis, &c., absolute rest must be enjoined, especially during the second and third weeks of the puerperium, as this is the period at which the clots disintegrate. Sudden death from air embolism in the puerperium is of doubtful occurrence from physiologic, pathologic, and rational standpoints. Shock may be both a direct and an indirect cause of death in the puerperium, and should be guarded against. Organic heart affections, renal disease, &c., are capable of causing death at any time, and are not to be overlooked during the puerperium. (Medical Record, May 8, 1897.)

SALPINGITIS AND THE GONOCOCCUS.

Luther admits three explanations of the presence of the gonococcus in a salpinx :—(*a*) By continuity of the mucus ; (*b*) by continuity and passage through the tissues ; (*c*) by the circulatory system, generally by the lymphatics, but some times through the blood-vessels. Drs. Reymond and Magill (*Annals of Surgery*, September-October, 1896), admit only the first explanation ; they limit the direct responsibility of the gonococcus in the production of puerperal fever and secondary infection ; but believe that it exercises an influence, as yet little known, which disposes the tissues to be easily attacked by a mixed infection, either by increasing the virulence of the other micro-organisms or by diminishing the resistance of the mucous surfaces. (From Dr. A. E. Giles' review-abstract in the British Gynæcological Journal, May, 1897, of Drs. Reymond and Magill's paper.)

SEPTICÆMIA PUERPERAL, ANTI-STREPTOCOCCIC SERUM IN.

(By G. H. Mapleton, M.B.) On March 7 I delivered a woman of a living child by turning, having previously dilated the os by Barnes's bags, on account of placenta prævia, which had caused very severe flooding and which had been treated by plugging. The placenta came away immediately after the child, leaving some of the membranes behind. Intrauterine douches of corrosive solution (1 in 2,000) were used freely. There was a slight rigor the same evening, and a rise of temperature, which during the next two or three days did not improve, but ranged usually between 101° F. and 102° F., and seldom fell to 100 F. The lochia became very offensive. Iodine was sub-

stituted for corrosive sublimate, as the latter caused salivation. On March 11 there was a severe rigor, with a temperature of 103·2° F., which fell in a few hours to 99·6° after a dose of antipyrin. On March 12 there was another rigor and a temperature of 102·2°. Twenty c.cm. of anti-streptococcic serum were now injected, and the temperature fell in a few hours to 99·4°. On March 13 the temperature went up to 100·4° (the last time it reached 100°), and the lochia were much better. On March 14 another dose of the serum was given, the temperature being 99·8°, with the result that it fell to 98·2°. From this time the patient made a good recovery, without further injections, the temperature merely rising from normal in the morning to 99·5° or less in the afternoons for about ten days. The injections caused no local inconvenience. The serum came from Messrs. Burroughs, Wellcome & Co. (British Medical Journal, April 24, 1897.)

SYMPHYSIOTOMY.

The dangers may be thoroughly classified into four groups:—(1) Sepsis ; (2) hemorrhage ; (3) injuries and lacerations of urethra, bladder, and vagina ; and (4) injuries of sacro-iliac joints. (1) The avoidance of sepsis can only be obtained by the most scrupulous disinfection before and after operation. (2) Hemorrhage is generally slight, except in the lower part of the incision, and for this reason it is advisable not to prolong the incision too far, but rather to draw down its lower angle a little. The front of the symphysis pubes, as well as its upper and lower margin, should be carefully cleaned with the knife, and the separation of the bones should only be allowed to take place very gradually. (3) Injuries and lacerations of the urethra, bladder, and vagina are more likely to occur in primiparæ, and for this reason many writers regard the operation as unsuitable in first confinements. The insertion of the forefinger behind the symphysis will prevent direct injury to the soft parts behind, and renders unnecessary the use of any director. Careful division of the sub-pubic ligament and slow separation of the bones are needful precautions against laceration of the soft parts. There is a risk during the extraction of the head of bruising the soft parts between the ends of the pubic bones and the head of the child. This may be obviated by the insertion of a pad of iodoform gauze behind the ends of the bones, and by careful extraction. (4) The main cause of injury to the sacro-iliac joint is excessive separation of the pubic bones. The operator must be careful to watch the amount of separation and to measure the space if it seems to be growing dangerously large. Pinard has given 7 cm. as the measurement of separation beyond which it is not safe to go. Two good assistants are

necessary, one on each side of the patient's pelvis, to make pressure inwards at the time of the division of the symphysis, and later if the bones seem to be separating too widely. Time will not permit me to discuss the relative advantages and disadvantages of symphysiotomy as compared with other methods of delivery which aim at saving the child, but I may say that, within its proper limits, it is, in my opinion, to be preferred to Cæsarean section, and offers a much better chance for the child, and is little, if at all, more dangerous for the mother than the induction of premature labour. (From Dr. Donald's paper in Edinburgh Medical Journal, December, 1896.)

TUBAL ABORTION.

(By Bland Sutton, *The Lancet*, February 13.) A multipara, aged 41 ; last pregnancy in 1886 Menstruation regular till July, August, and September, 1896, when there was only a slight show. In July, August, and September the patient had severe attacks of abdominal pain, lasting from a few hours to five days. She was admitted into the Chelsea Hospital for Women with a diagnosis of "tubal pregnancy, and very probably tubal abortion." At the operation three reniform clots were discovered over-lying and surrounding the tube, laminated externally like the lining of an aneurism, internally containing a soft clot. The tube contained on the same (left) side a mole, and was removed together with the adjacent meso-salpinx, the ostium abdominale being widely distended. The patient recovered. It is surmised that the reniform clots had been moulded in the tube and had been expelled through the ostium, the aforementioned attacks of pain coinciding with their expulsion. (Abstract in Quarterly Medical Journal, April, 1897.)

TWIN PREGNANCY.—The Diagnosis of.

The existence of twin pregnancy is rendered probable by unusual and irregular enlargement of the abdomen, by the occurrence of fœtal movements in different parts of the abdomen, and with increased activity and by an exaggeration of the usual concomitants and disturbances of pregnancy. The diagnosis is assured if pulsation of the fœtal heart can be heard with maximum intensity in two different situations and without synchronism, as was first pointed out by Kergaradec. In the determination care must be exercised to exclude the mother's heart sounds as well as those of the observer. To further eliminate the possibility of error, Ahlfeld has proposed simultaneous auscultation of the abdomen by two different observers, and in a recent communication (*Zeitschrift für Geburtshülfe und Gynäkologie*, B. xxv., H. 2, p. 180) he details experiences in

which the employment of this diagnostic adjunct proved of the utmost service. It is necessary in thus employing auscultation in the diagnosis of twin pregnancy that the heart-count be made simultaneously and for at least a whole minute at a time. In private practice, when it is not convenient for two persons to make comparative observations, the physician may practise auscultation of the two sides of the abdomen in rapid succession. Under these circumstances it is important for the patient to make no change in her position during the examination, as any such movement may have a pronounced effect upon the heart-beat of the fœtus and give rise to apparent differences that may occasion deception. The result of such observations may be accepted as conclusive only if the differences in the beats of the two sides are positive and pronounced ; otherwise it will be necessary to resort to comparative simultaneous observations by different persons. (From a leading article in Journal of the American Medical Association, December 12, 1896.)

UTERINE MYOMATA.

The following remarks are taken from Dr. Charles P. Noble's paper on Hysterectomy in America :—The mortality of fibroid tumours is greater than it is usually stated. It much exceeds the mortality of operation for the cure of the disease. The mortality of supra-vaginal amputation for fibroid tumours of the uterus at the present time is about 5 per cent. The mortality of total hysterectomy for fibroid tumours of the uterus at the present time is about 9 per cent. The mortality of hysterectomy is greatly increased by the traditional policy of delay in advising operation for fibroid tumours, which still influences both practitioners and surgeons. Early operation for fibroid tumours should be urged upon the basis of genuine conservatism as contrasted with spurious conservatism. Early operation ensures a low mortality. It permits the substitution of myomectomy for hysterectomy in women of child-bearing age in a larger percentage of cases than is possible with tumours of large size. It conserves the life and the health of the patient, and when myomectomy can be performed, restores her sexual organs to functional integrity. The policy of delay, or spurious conservatism, conserves only the continual growth of the tumour. It entails upon patients years of invalidism or semi-invalidism, and subjects them to much greater risks than those of early operation. Finally, many of those who have suffered for years in the hope of relief without operation, are obliged to submit to hysterectomy, when their chances for recovery are much less than had the operation been done early. Myomectomy is the ideal operation for fibroid tumours. The next advance in the treatment of fibroid tumours will be the acceptance of early

operation, with the definite purpose of substituting myomectomy for hysterectomy in women of child-bearing age, in cases having only a small number of fibroid nodules. (British Gynæcological Journal, May, 1897.)

UTERUS, ACUTE INVERSION OF. — Abdominal Section—Reduction, followed by Recovery.

Brown, of Springfield, Mass., reports in the *Boston Medical and Surgical Journal*, 1897, No. 6, the case of a multipara who had sustained inversion of the uterus, caused by pulling upon the umbilical cord in removing the placenta. This was followed by severe bleeding and collapse. When seen, eight days after labour, the patient was anæmic, with severe cough, papular eruption, and fever. An attempt to return the uterus to its former position was made under ether, which failed on account of involution of the cervix, hemorrhage which followed, and the poor condition of the patient. Twenty-four hours later abdominal section was performed, the cervix was dilated, and, after twenty-three minutes' effort, the uterus was returned to its normal position. It was then ventrofixated by a single silk ligature passed through the abdominal wall. The uterus was curetted, irrigated, and packed with gauze. The patient had fever for some days, with rapid pulse, but finally recovered. (American Journal of Medical Science, May, 1897.)

UTERUS.—Deflection and Rotation of the Pregnant and Puerperal.

Dr. Milne Murray (*Edin. Med. Journ.*, February, 1897) discusses the various views that have been put forward to explain this condition. He considers that it is to the construction of the muscular wall of the uterus that we must look for the explanation of the tendency to rotation. The rotation and deflection persist for a few days after the expulsion of the child. He notes the curious fact that in occipito-posterior cases the deflection of the uterus is nearly always to the left instead of to the right, and it is an interesting fact that there is a fairly close numerical relationship between the proportion of cases of occipito-posterior position and cases of left lateral deviation. Out of 26 cases of occipito-posterior position observed by Dr. Murray, 18 showed definite left-sided deviation after labour. In the other cases the uterus lay in the middle line, and in none of them was the ordinary right-sided deviation observed. Schröder and Stratz have noticed the same thing, but no satisfactory explanation has been suggested. It is a matter of some doubt whether the position causes the deviation or the deviation the position. (Practitioner, 1897, p. 538.)

UTERUS.—Rupture of.

Mr. Mercer related (before the Bradford Medico-Chirurgical Society) a case of "Rupture of uterus" with recovery of the patient. The patient was in labour with her sixth child in seven years, previous labours having been natural. Was seen in the morning, when the os was found to be partly dilated and the membranes ruptured, the pains were weak and irregular. She remained in the same condition all day till 7 p.m., when she became suddenly collapsed. On examination the placenta was found in the vagina, but the child was not at first felt. The uterus was distended with clot, and a transverse rent was felt just above the posterior fornix. On passing the hand through this the child was found free in the abdominal cavity, seized by the leg and delivered, the head passing through the rent with difficulty. The condition of the patient not permitting of any operative measure, a pint of normal saline was injected into basilic vein, but no improvement of the pulse resulted. The vagina was swabbed out with antiseptic solutions, but no syringing was employed. There was a slight attack of peritonitis, but the patient eventually recovered after a prolonged convalescence. No cause for the rupture was discovered. (Medical Press and Circular, December 9, 1896.)

VOMITING OF PREGNANCY.—Treatment of.

In spite of much writing on this subject, it is still obscure. Cases frequently occur in which all known remedies fail, and new ones have to be sought for. By accident, the author is able to confirm the fact that tamponade of the cervix uteri with gauze contributes to the arrest of the vomiting. A patient who had vomited constantly in her first pregnancy, suffered in a similar manner in her second. On this occasion the constitutional changes induced by the vomiting were so grave that it was decided to induce abortion. This was in the thirteenth week of the pregnancy. The cervical canal was tamponaded with iodoform gauze ; the tampon caused slight pains, but it still more quickly arrested the vomiting. The author then relinquished the idea of completing the abortion, and the patient rapidly improved. A relapse, however, took place suddenly later on, and the tampon had to be introduced again ; this was in the twenty-sixth week. Another application was called for on the thirtieth. The result this time was not so lasting, but pregnancy was prolonged until the thirty-second week, when a viable child was born. The child lived. As regards the case described, none of the causes usually spoken of as causing the disease were present. The author was therefore inclined to the opinion that the rigidity of the portio in that case caused the vomiting, and the more so as, on the basis of several cases, it has been shown that the os uteri

was the point of outset of reflex vomiting. Only a short time ago the author saw a case in which, in a woman in labour, simple eccentric pressure on the anterior border of the half-dilated os uteri set up vomiting, with the certainty of an experimental demonstration. (Medical Press and Circular, December 23, 1896.)

WALCHER'S POSITION IN PARTURITION.

W. E. Fothergill (*British Medical Journal*, October 31, 1896) finds that in about thirty cases measured by him the average increase in the diagonal conjugate gained by the Walcher position was one centimetre, the claim made by Walcher. The parturient woman is placed in the lithotomy position and the legs allowed to hang down, the feet not touching the floor. If the bed is low, pillows are placed under the buttocks so as to raise the body until the feet hang clear of the floor. There is a tendency to pull the patient off the bed, but she may be held by the anæsthetist, or bands passed under the arms and fastened to the bed. He reports several cases where extraction failed until the Walcher position was adopted, when it took place without difficulty. He sums up as follows :—(1) In high-forceps cases, and after perforation the position saves. (*a*) The strength of the operator ; (*b*) pressure on the head ; (*c*) pressure on the symphysis ; (*d*) pressure on the perinæum by forceps. (2) In cases of difficulty at the brim not needing forceps, and in breech cases, the position saves (*a*) exertion to the uterus and abdominal muscles ; (*b*) pressure on the head ; (*c*) pressure on the public symphysis. (3) In all cases, with or without forceps, where the perinæum is in danger, extension of the legs at the hips is of advantage in relaxing the integument and subjacent structures at the vulvar orifice. (Boston Medical and Surgical Journal, February 11, 1897.)

EYELLE
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Medicine.

GENERAL MEDICINE AND THERAPEUTICS.

Art. 1.—SERUM DIAGNOSIS OF TYPHOID FEVER.

By A. Sheridan Delépine,
Procter Professor of Pathology, Owens College, Victoria University, Manchester.

[We take the following from Professor Delépine's paper. This new departure in the bacteriological diagnosis of disease is of considerable importance :]

I finally adopted a method the objects of which are :—(1) To permit the measurement of extremely small quantities of blood; (2) to simplify the apparatus required so as to diminish chances of contamination ; (3) to make it easy to destroy rapidly by heat all traces of serum which may remain attached to the measuring instrument ; (4) to obtain conditions under which spurious clumping is not likely to occur. All the apparatus required consists of :—(*a*) A sterilised lancet-shaped needle. (*b*) The small pipette in which the blood has been collected, and of such diameter that after it has been broken across the platinum loop, which is used for measuring the serum, can easily be introduced into it if necessary. (*c*) A platinum loop measuring about 1 mm. in diameter, and holding about 2 mg. of fluid. (*d*) Slide and cover glass, absolutely clean ; if they have been used before for the test they should be boiled in water. (*e*) A tube of culture of the typhoid bacillus in neutral bouillon (twenty-four hours old at most). This tube should be free from clumps, and the bacillus should be actively motile.

The procedure is as follows :—With the sterilised loop 9 drops of the evenly turbid bouillon culture are taken and deposited separately on the clean slide or cover glass. The platinum loop is again sterilised, and, when cool, one drop of the blood is taken, and deposited also separately on the cover glass or slide. The 10 drops are then mixed thoroughly and rapidly together. If the mixture has been made on the cover glass the cover is placed on the slide, moist face downwards, and gently pressed so as to obtain an even film. If the mixture has been made on the slide, it is simply covered with a clean cover. In either case the preparation consists of a thin film of culture mixed with

the serum investigated and a certain number of red blood corpuscles, separating the slide from the cover-glass so that a capillary space of pretty uniform thickness is obtained. It will be noticed that instead of separating entirely the blood corpuscles from the serum, I try on the contrary to retain a part of them in the preparation. They do not interfere in the least with the reaction, and they have the advantage of acting as supports for the cover-glass, and of causing the film in all preparations to be nearly of uniform thickness. Under these conditions the bacilli are free to move about; and when the preparations are kept in a moist chamber they can be observed from day to day for more than a week.

(1) When the blood tested is that of a non-typhoid patient, the bacilli remain diffused all through the preparation; they move freely about, and even when kept for days they hardly ever show any tendency to form good clumps. This absence of characteristic clumping is observed even when the proportion of blood is one-fifth or even one-half. An imperfect clumping without loss of motility has been observed in a few cases after twenty-four hours, but the appearance of the preparation in such cases is quite different from what is observed in cases of typhoid fever. The motion of the bacilli is quite characteristic; they move at different rates, some, especially the very short ones, darting across the field, and disappearing in a few moments; others pursue a zigzag course. Some of the long ones are less active, and progress by an undulating motion; some are almost motionless. The actively motile bacilli, by striking against blood corpuscles, keep them in constant motion. The power of some of the bacilli is such that they often drag or push the corpuscles through a portion of the microscopical field. The bacilli have generally seemed to me, to be most active after they have been in contact with the blood for a short time. After a few hours they generally become less motile, but not altogether motionless, and the progressive motion is seldom lost before several days have elapsed. When clumps are formed they are generally very small, very few, and composed of bacilli which are quite motile still and are very often seen to separate themselves again. Owing to the activity of the bacilli these small imperfect clumps are seen to alter in shape. As this phenomenon is seldom observed, and as, when it occurs, it does not take place till after several hours have elapsed, it is not (under the conditions explained above) a serious source of difficulty. When bacilli are kept for days under observation, they multiply, and many of them become very long.

(2) When the blood tested is that of a typhoid patient in a suitable stage of the fever (that is, after the third or fourth day from the beginning, and better still after the seventh or

eighth day), the phenomena observed differ according to whether the serum is potent or not.

When the serum is potent changes take place so quickly, that, however rapidly the mixture is covered and placed under the microscope, many of the bacilli will already have become nearly motionless, and several clumps will have formed before the preparation can be seen. The greater part of the bacilli, however, will still be actively motile, in fact they seem very often to be in a state of extraordinary activity, as if they were under the influence of stimulation. Soon however, that is from two to five minutes, they gradually lose their power of translation, they seem paralysed, and exhibit nothing more than an oscillatory motion, which after a time becomes feebler, and cannot be distinguished from Brownian movement. At the same time clumps are forming rapidly. In from five to thirty minutes hardly any free bacilli remain between the clumps, which may be of various sizes. The presence of the corpuscles does not affect this phenomenon of agglomeration. The corpuscles behave like perfectly indifferent bodies. The bacilli are not attracted by them; they do not seem either to be clearly repelled, but it is worth noticing that clumps very seldom enclose a corpuscle or form against them. All bacilli do not behave exactly in the same way; some of the very small bacilli, almost coccus-like, very often retain their motion for a longer time than the others.

When the serum has a feeble agglomerating power the changes described above take place much more slowly and less completely. Both in the case of the complete and of the incomplete reactions just described, the agglomeration remains clearly distinct for days after the preparation has been made. In some cases the bacilli remain motionless, but in most cases many bacilli regain their activity. There is also marked evidence of growth. The bacilli forming the clumps may reach a great length, but the filaments thus formed remained clumped together. In very few cases the bacilli become granular and indistinct; this has usually been observed when the reaction has been intense.

Before concluding, I must add that when the question of applying this test to diagnosis, and the method of collecting the blood had to be considered, I thought it necessary, in order to remove chances of contamination, to recommend (1) that the skin from which the blood was obtained be sterilised; (2) that a needle which had not possibly come in contact with any other blood, and been thoroughly sterilised, be used; (3) that nothing but blood collected in sterilised hermetically-sealed pipettes be sent to the laboratory. Further experience has convinced me that all these precautions are useful.—*British Medical Journal*, *April* 17, 1897.

2.—A PLEA FOR A LESS RESTRICTED DIET IN TYPHOID FEVER.

(A Clinical Lecture delivered at the Leeds General Infirmary.)

By A. G. Barrs, M.D. Edin., F.R.C.P. Lond.,
Physician to the Infirmary and Professor of Therapeutics and Materia Medica in the Yorkshire College of the Victoria University.

[We are unable to print the whole of Dr. Barr's interesting paper. Sufficient, however, is given to explain the important lesson contained in it.]

The observations I am about to make are the outcome of my experience in the treatment of typhoid fever in this hospital during the last three years. No one who has had much to do with patients suffering from enteric fever can fail to be impressed by the extreme degree of emaciation, feebleness, and prolonged disablement which that disorder not infrequently entails upon its victims; and it was with the idea that something might be done to mitigate its evils in this respect that I ventured, three years ago, to adopt the method of treatment which, with its results, I wish now to place before you.

During the last three years, every case of enteric fever—31 in number—admitted under my care has been treated upon this principle, and we have lost only three of them, and in these three fatal cases we were never able to give solid food. We have lost no case in which early feeding was adopted, and our case mortality has not been so great as the average mortality of the hospital. True relapse occurred in two of the 31 cases. I have recommended the same plan of treatment in all cases in which my opinion has been asked in consultation, but in these cases I am unable to state what the result has been.

(1) *Solid food during convalescence.*—I will deal with the convalescent stage first, because I believe there is already a somewhat general tendency to relax the strict rules at one time followed, although in 1894 Dr. Curnow laid down, in most emphatic terms, the law that no solid food should be given until the temperature has been normal for at least ten days. The reason alleged for this practice is the belief that the earlier administration of solid food will cause relapse or even perforation. In regard to relapse being caused by solid food, I may state at once my own utter disbelief in the notion. It is difficult for me to conceive any method of treatment more calculated to delay healing and so favour perforation than the prolonged period of starvation which the plan of fluid feeding, still advocated as essential for ten or fourteen days after the febrile

state has come to an end, adds to the devastating effect of pyrexia and limited feeding of the disease itself. I have to express my firm belief that there is no sufficient reason for withholding solid food in the stage of convalescence; on the contrary, I hold strongly that the sooner the patient returns to the natural diet of health, that is, solid mixed food, the sooner will he be restored to a condition in which he is best able to withstand any further invasion of the typhoid organism, and the sooner will his nutrition be such as to place his intestine under the best possible condition for healing.

(2) *Solid food in the acute stage.*—My rule in typhoid fever is to give the patient such wholesome food, solid or fluid, as he can take, using the word "take" to mean that he likes it, and wishes for it, and enjoys it. It has, I believe, been said by some who take an interest in my views in this matter, that I give in all cases, and at all stages of typhoid fever, solid food. Nothing could be further from the fact. If I am convinced that a patient is genuinely hungry—and many patients are so in all stages of typhoid fever—I never refuse him reasonable solid or any other food, whatever his condition in other respects may be. I say "genuinely hungry," because sometimes patients, knowing as a matter of common knowledge how sure a sign of returning health an ability to take natural, that is solid, food is, will deceive themselves into believing that they can take solid food, when such is not the case. The point is not one of much difficulty. Patients with dry tongues (not simply furred tongues) and lips and teeth, cannot, I think, have an appetite for anything but water, whatever they may say. Even in such cases solid food does no harm, for it is soon withdrawn, for the simple reason that the patient cannot take it. My constant question to the patient, when I believe he has sufficient intelligence thoroughly to understand it, is, "Are you hungry?" And if he says "Yes," and I am convinced that he means it, and is really hungry, I give him some simple thing which he expresses a desire for, especially meat. Whenever a typhoid fever patient can eat meat and enjoy it, I have never much doubt as to his recovery. It is usually minced meat to begin with, because it is more easily given in the recumbent posture, for I am very tardy in allowing the patient to leave even the recumbent posture until he shows that he has largely regained his normal strength.

Objections to its Use considered.—The administration of solid food during the course of the fever is generally said to be undesirable, if not absolutely dangerous, from its liability to produce (*a*) increased diarrhœa, (*b*) perforation. I do not mention hemorrhage, though perhaps that may have been alleged as a reason for a strictly fluid diet. My cases show

that reasonable diet of any kind has no effect one way or the other in the matter of diarrhœa. Diarrhœa is a very varying thing in typhoid fever, even with the strictest dieting, and I think such variations in it as are usually attributed to food may very readily and reasonably be attributed to the specific lesion of the disorder.

Perforation is to my mind by far the most important point with which I have to deal, for I shall be the first to concede that if solid food can, with reasonable certainty be blamed for a single case of perforation, it would be quite unjustifiable to give it. Perforation is not a common accident. Under orthodox methods of dieting it occurs in from 2 to 3 per cent. of all cases. It seems to me that perforation may come about in one of two or three ways :—(1) By a direct extension of the typhoid process to and through the peritoneal coat of the intestine. (2) By undue stretching of the intestine when the peritoneal coat has been exposed by separation of the slough. This is usually brought about by flatulent distension (we all very properly regard a distended abdomen as dangerous). (3) By violent peristalsis such as that induced by purgatives or foreign bodies in an intestine in which the peritoneum only forms the floor of the ulcer.

We have, of course, no facts to guide us, but my opinion is that the majority of cases are due to the direct effects of the typhoid process, and are not accidental in the strict sense of the term, and are unavoidable by any form of dieting unless it be by liberal feeding in order to maintain the resisting powers of the individual at the highest level possible under the circumstances. Tympanites and violent peristalsis are not more likely to occur under the method of feeding which I am advocating than under strictly fluid diet. I believe that whatever food we put into the stomach, if it is digestible and the stomach is digesting, it will reach the seat of the typhoid lesion in the same state of fluidity, whether it be milk, beef-steak, bananas, or what not. If the stomach is not digesting the patient will not be hungry, and, consequently, according to my rule, solid food will not be given to him. I would suggest that solid food alone cannot be a cause of perforation, or perforation would not occur when the diet is so strictly regulated as it is.

I believe the general experience to be that the majority of cases die from conditions such as cardiac failure, lung complications, and all the other devastating effects of general infection, against which the patient can set only such powers of resistance as he possesses, and which will be more or less effectual according as we have maintained his general nutrition by food, and diminished the other effects of the wear and tear of his disease by all means in our power.

There is in the treatment of typhoid fever too great a tendency to treat the intestinal lesion at the expense of the individual, or if not that, to make the temperature chart the sole arbiter of our practice.

What I am contending for is that we should enforce no further departure from the normal diet of health than the disease itself enforces by the inevitable loss of appetite and impaired digestion of the pyrexial state. When a patient suffering from typhoid fever expresses a genuine desire for solid food, and his expressed desire is confirmed by his physical condition, I give him such food as he can take, especially meat. I do not suggest, much less insist, that a patient with a dry baked mouth, semi-delirious, and probably loathing even milk, should be fed upon beef-steaks. Such a proceeding would, in my opinion, be as ridiculous and unjustifiable as to insist that a man, who with a clear mind and a full appreciation of his condition says he is craving for solid food, should be refused it.—*British Medical Journal, February* 16, 1897.

3.—MODERN VIEWS OF TYPHOID FEVER.

[The following is taken from a leading article in the *Medical Press and Circular*, February 24, 1897 :]

Some four or five papers dealing with various points in its pathology, complications, and treatment, have followed each other in succession at the Royal Medical and Chirurgical Society, and, taken together, the discussions which followed the papers will be found to comprise many points of practical and scientific importance. It seems that in Vienna it is the routine practice to confirm the diagnosis of typhoid fever by search for the bacillus in the urine, and a paper on this subject was recently read before the Society by Dr. Horton-Smith, who gave the results of his own experience with this test. Unfortunately he finds himself unable to confirm the results obtained in Vienna, seeing that in his hands the presence of the bacillus in the urine of typhoid patients is by no means constant, and when found it has only been comparatively late in the disease, long after any assistance of the kind could be of service. It is, nevertheless, a fact of considerable practical importance that the bacillus is, in a large proportion of the cases, present in the urine at one period or another, for this establishes peremptorily the liability of the urine to convey the infection as well as the fæces, which have hitherto been regarded as virtually the only vehicle of the *materies morbi*. A new field of research is also opened up in the direction of contrasting the results

obtained from the bacteriological examination of the urine with the newly-discovered serum diagnosis. Regarding the latter, Dr. Durham remarks that it is much easier to obtain a positive than a negative reaction, and he displays a sceptical spirit in regard to many of the positive results alleged to have been obtained. By contrasting the results of these two methods of research, conducted on parallel lines, it will be possible to throw light on their respective and collective value. It is, perhaps, to be regretted that neither of them are altogether *à la portée* of the general practitioner, upon whom, as a rule, falls the responsibility of deciding the nature of the disease. Passing on to the nervous sequelæ of typhoid fever, these are usually very scantily dealt with in current text-books. That prolonged and more or less marked mental enfeeblement is apt to follow an attack of typhoid fever is a matter of common knowledge, but singularly little information is forthcoming in respect of other important, if comparatively rare, phenomena—convulsions and rigors, for example. Dr. Abercrombie, who read a paper on this class of symptoms, takes the view that the imbecility which is sometimes left after an attack may be due to inadequate nutrition; but his view is somewhat weakened by the fact that this mental condition is often met with in hospital patients, who cannot be supposed to have suffered from lack of nourishment, unless, indeed, the dietary usually permitted to typhoid patients in hospital is itself insufficient. A novel point in the clinical picture of typhoid fever is the occurrence of rigors, often of extreme violence. It is true that a rigor may indicate perforation and commencing peritonitis, and it may accompany thrombosis, a not unfrequent complication. It is clear, however, from the author's observations that such rigors may occur without appreciable cause, and without any of the grave sequelæ which their occurrence would naturally lead one to apprehend. At the same time, notwithstanding the fact that rigors do not necessarily possess great prognostic importance, their occurrence can hardly do otherwise than give rise to grave anxiety, to be allayed only by their prompt disappearance. In two instances of the kind mentioned by Dr. Norman Moore, the rigor was followed by the discharge of pus in the urine, and in one it marked a recrudescence of activity in a tuberculous lung. In spite, therefore, of the reassuring results of the author's observations, it is not safe to shout until we are out of the wood. There is reason to believe that the occurrence of these alarming rigors may be due to the action of some poison which has a selective action on the nerve cells, but we must not lose sight of the factor of heredity in the production of these and other nervous phenomena. Careful inquiry into the family history in cases in which delirium or

other nervous disturbance is a marked feature will generally elicit evidence of neurotic tendencies, and in patients thus predisposed very trivial sources of irritation may prove sufficient to determine these unexpected and disconcerting manifestations.

4.—IMMUNITY FROM TYPHOID FEVER OBTAINED BY INOCULATIONS.

[The importance of this subject warrants the inclusion here of the following leader, taken from the *Medical News*, December 26, 1896 :]

Pfeiffer and Kolle have been conducting, at Koch's Institute in Berlin, a series of experiments with cultures of typhoid bacilli, and have obtained valuable results, some of which are outlined in an article in the *Deutsche med. Woch.*, November 12, 1896. Those who have kept in touch with the discoveries made in connection with the subject of immunity, know that protective inoculation against cholera has been conducted in India on a tremendous scale. In 1895 over 100,000 persons were inoculated, first with a small dose of a sterilised culture of cholera germs, then five days later with the same dose of a living culture, and five days after that with a final larger dose of the living culture. The results were definite, and not entirely unexpected. The inoculated individuals, when compared with others in similar circumstances who were not inoculated, were found to possess to a considerable degree an immunity from cholera.

Experimental research has yielded similar testimony. Thus it is found that 0·5 c.cm. of normal human serum is sufficient to save a guinea-pig from death if it is injected simultaneously with a loop full of cholera cultures into the animal's abdomen; a single milligram—indeed, in some cases only a fraction of a milligram—of the serum of a cholera-inoculated man will avert death if injected in the same way. This specific result with such a minute dose can only be obtained by using the serum of either a person who has recovered from cholera, or, as already said, of one who has been inoculated with cholera cultures.

These results were so definite that Pfeiffer and Kolle resolved to test the typhoid bacillus in the same way, using for the purpose a most virulent culture obtained from the spleen. A small quantity of this was diluted with bouillon, sterilised, and injected under the skin of a man who had never had typhoid fever. The injection was followed by a chill, dizziness, and a temperature of 38·5° C.—101·3° F. These symptoms disappeared entirely in one day. The serum from the man so

treated was drawn before inoculation, and six and eleven days after the inoculation, and used for experiments upon guinea-pigs. The results were found to be analogous to those obtained with cholera germs. At six days the serum showed its power of saving a guinea-pig, if injected into the abdomen with an otherwise fatal dose of typhoid culture. By the eleventh day this immunising power was still stronger, being then at least as strong as that of the serum of a convalescent typhoid patient.

In the light of our present knowledge it seems that the freedom from second attacks, enjoyed by patients who have recovered from typhoid and certain other fevers, is due to the appearance in the blood of some specific germicidal substances. Their presence insures for a certain time—for months or years it may be—immunity from that particular disease which has produced them. If these artificial inoculations produce in the individual a serum of germicidal power equal to that of a convalescent patient, why will they not confer immunity against typhoid fever just as well as a previous attack of the disease? These investigators believe that this is so, and look for a practical application of the theory in some rapidly spreading epidemic.

It will be noticed that this is quite a different thing from the inoculation of a man already sick. The system in the latter case is already poisoned and reacts very differently to the injection of the serum. As in cholera so with typhoid; this antitoxic serum possesses a germicidal power, but does not seem to have any counteracting influence upon the toxic products of the typhoid bacilli. In this sense it is not an antitoxin.

5.—THE DIFFICULTIES IN THE DIAGNOSIS OF THE ERUPTIVE AILMENTS OF CHILDHOOD AND IN THEIR COMPLICATIONS.

One of the most difficult points which is met with by the practitioner who devotes himself to the care of the diseases of childhood is the differential diagnosis of the early stages of the various infectious and eruptive diseases which occur in more or less aberrant types so frequently in practice.

The very large number of causes that exist for the development of roseola upon the skin of children, and the fact that a rose rash in its various forms is a typical rash of most of the eruptive fevers, naturally aids in making obscure cases more difficult; and the violent nervous symptoms which are sometimes associated with the absorption of toxic materials following the ingestion of bad food, and accompanied in a few hours by

the development of a bright roseolous rash, may quite readily lead to the erroneous diagnosis of true scarlet fever, unless the physician is on his guard, and after examining his patient carefully, finds none of the characteristic throat manifestations of this disease.

Again, the erythema, or roseola, which sometimes appears over the skin of children eight to ten days after they have been vaccinated, and which is followed in a course of a few days by slight desquamation, may mislead the unwary; and it is also interesting to note that in addition to the dermatitis, caused by coming in contact with irritant materials, such as poison ivy, the handling of caterpillars by children having an irritable skin, sometimes results in the appearance of a rose rash, if we can believe the assertions of Dukes. Again, in children, the rose rash of typhoid fever may be so widely distributed as to look like a mild attack of measles, although it is, of course, in the great majority of cases, far more limited. Again, the fact that a rose rash appears in diphtheria, septicemia, malarial poisoning, and Bright's disease, is not to be forgotten. When we consider that sometimes when one eruptive disease complicates another during its course or its convalescence, the difficulties are still further increased. Fortunately, such complications are comparatively rare, yet they do occur, and it is against these rare instances that we should be most constantly on our guard.

Our attention has recently been called to this matter by an article by MacDowell Cosgrave, of the Cork Street Fever Hospital, Dublin, which he has published in the *British Medical Journal* for January 16, 1897. In this article, after a brief *résumé* of a number of cases of one eruptive disease complicating another, he reports five cases of his own in which there were concurrent attacks of scarlet fever and typhoid. In all of these cases, however, the diagnosis depended chiefly upon the development in a child apparently suffering from scarlet fever of the characteristic symptoms of typhoid fever, and in none of them, very naturally, considering the time at which they were studied, were the newer tests for positive diagnosis of typhoid fever resorted to, such, for example, as the agglutination test of Widal, or the diazo-reaction in the the urine, upon which, of course, considerable doubt has been thrown.

The cases all of them follow about the following type:— A boy, aged 7 years, admitted on the second day of his illness, was suffering from scarlet fever, and had a well-marked rash, swollen, ulcerated tonsils, and a characteristic tongue. For ten days after admission the scarlet fever ran a mild course, the only complication being a slight diarrhœa. After this

time, however, the evening temperature rose to 100° and two days later to 104°. Symptoms of enteric fever gradually developed; there was a typical range of temperature, enlargement of the spleen, moderate tympanitis with diarrhœa, but no characteristic eruption of typhoid. There were no complications, and temperature became normal on the thirty-fourth day, that is, twenty-four days after the first symptoms of enteric fever. The other four cases which are reported do not seem so unmistakably those of typhoid fever, although they possess many of the symptoms which we are wont to associate with that disease; for the mere presence of diarrhœa, of asthenia, of enlargement of the tonsils and the spleen, and perhaps of the liver, are not necessarily pathognomonic signs of the presence of an infection by the bacillus of Eberth. On the contrary, it has been recognised for a long time that any condition of profound asthenia may be mistaken for typhoid fever, "the type of the typhoid state," unless great caution is exercised. In this connection it is interesting to note the statement made by Dr. Da Costa as follows :—"In regard to scarlet fever, the state of exhaustion noticeable at the close of the fever and while desquamation is still going on, is at times great, so great that in young persons especially the case wears the look of typhoid fever, and the resemblance is increased by the occurrence of diarrhœa associated with a swelling of the solitary and agminated glands; but the signs of desquamation—the sore throat, the enlargement of the cervical glands, and the history of the affection, furnish distinctive marks of the utmost value."

We have called attention to Dr. Cosgrave's article because we believe it to be a valuable and noteworthy one on the subject of which it treats, and we hope that physicians meeting with similar aberrant or real complications will not fail to report them.—*From an editorial in Pediatrics, March* 15, 1897.

6.—ON THE GLANDULAR FEVER OF CHILDHOOD.

By Dawson Williams, M.D., F.R.C.P. Lond.,
Physician to the East London Hospital for Children, Shadwell.

The symptoms of the disorder, as noted by E. Pfeiffer and elucidated by subsequent writers, are briefly as follows :—The patient, a child under 14 years of age, becomes suddenly ill, the temperature is found to be raised—101° to 103° F.—there is anorexia, nausea, sometimes vomiting, coated tongue, constipation, and, perhaps, some ill-defined abdominal pain. The most

prominent and characteristic symptoms, however, are stiffness of the neck, tenderness in the anterior triangle, and some pain on movement of the head and on deglutition. There may be some undue redness of the pharyngeal mucous membrane, but throughout the whole course of the illness nothing like definite pharyngitis or tonsillitis. On the second or third day a swelling is noticed in the neck, which is found to be due to three or four enlarged lymphatic glands, which can be felt beneath the sterno-mastoid muscle and along its anterior border. The temperature becomes higher and usually touches 104° F., and the ordinary symptoms of pyrexia are present. The glands, which are tender, remain swollen for from two to five days and then begin to diminish. The glands first affected are as a rule those of the left side, and the pain on movement may lead to the head being flexed towards that side. Before the glands on the left side have begun to subside those on the right begin to enlarge, and in a day or two attain a size corresponding to that reached by those on the left side when at the maximum. Tenderness of the abdomen may be a very marked symptom, and in a large proportion of cases the mesenteric glands can be felt to be enlarged. The liver is enlarged almost invariably, and the spleen in more than half the cases. The other cervical glands may also become enlarged, the axillary and inguinal glands less often. The disease is mild, and is seldom or never the direct cause of death, but it leaves the child in an anæmic and depressed state, which may last long after all trace of enlargement of the lymphatic glands—which has usually ceased in ten days or a fortnight—has disappeared.

It is obvious that the specific characters of the disorder are not well marked. I have seen in the out-patient department of the Shadwell Children's Hospital during the last few years a considerable number of cases answering to the description of glandular fever, but it is difficult in London to trace a history of infection in connection with any of the diseases of childhood. Occasionally, however, I have observed several children of the same family to be affected in succession. The most distinctive point is that the swelling and tenderness of the glands occur without obvious lesion of the pharynx and tonsils, and are altogether disproportionate to any slight pharyngitis which may be present. The several glands can be distinguished on palpation ; the skin moves freely over them and is little, if at all, reddened. The spontaneous subsidence of the adenitis is also noteworthy. I have not met with a case in which suppuration occurred, and, according to all writers on the subject, this is an accident which does not occur, or occurs very rarely. The glands affected are, no doubt, those which are liable to become enlarged in affections of the pharynx ; but,

according to my observation, tonsillitis causes at first enlargement only of the highest of the deep cervical glands—that which lies on a level with the angle of the jaw. If the lower glands become enlarged it is at a later date and to a less degree. The glands which first become enlarged in association with dental disorders are those which lie transversely along the inner aspect of the lower border of the body of the inferior maxilla. Even in acute pharyngitis it is, according to my observation, very unusual to observe an enlargement, sudden and almost or quite uniform, of all the deep cervical glands. The epidemic described by Dr. Park West affected a sparsely populated district of Eastern Ohio. It began in the spring of 1893, continued in the cooler months of 1894 and 1895, and ended in the spring of 1896. Altogether 96 cases were observed in the district (all in the practice of Dr. F. A Korell); about 40 others were known to have occurred, but the attacks were so mild that medical advice was not sought, and the disease was heard of also in adjacent districts. The 96 cases occurred in forty-three families; the youngest patient was aged seven months, the oldest thirteen years. In the families infected about twenty children between these ages escaped. The characteristic feature in all the cases was enlargement of the cervical lymphatic glands. The incubation period cannot be stated positively. Hoerschelmann thought it was usually from eight to ten days in his cases, with extremes of five and fifteen days. Park West states that "many more children came down on the seventh day after exposure than upon any other day."

Though the pathology of glandular fever is unknown, it is of practical consequence to recognise that children are liable to an affection such as I have endeavoured to describe; that it is communicable; and that, though acute and accompanied often, if not usually, by high temperature, it is almost invariably benign, and does not lead to suppuration of the affected glands; but that it leaves behind it marked anæmia and general deterioration of health from which the child does not completely recover for a month or two.

There is one other point in which the affection resembles a specific fever. Treatment does not, so far as I have observed, or so far as can be gathered from the literature, exercise any influence over the course or duration of the malady. A cold compress to the neck, or, in the more severe cases, belladonna fomentations relieve the local symptoms but do not prevent the onset of adenitis on the opposite side. The bowels respond readily to laxatives, but the constipation soon returns. Purgatives, such as calomel, do not produce any more permanent effect, and Dr. Park West states that in some of the cases in which resort was had to this practice it seemed to be

responsible for greater depression and a more prolonged convalescence. (From Dr. Dawson Williams' paper in *The Lancet*, January 16, 1897.)

7.—DYSENTERY AND ITS TREATMENT.

By John Maberly, M.R.C.S. Eng., L.R.C.P. Lond.

[The following is taken from Mr. Maberly's paper, based on six years' experience in the use of some varieties of *monsonia*. The cases and other parts have been omitted :]

In discussing these cases it will be better to divide them into two classes, acute and chronic. First, acute. Out of 100 cases recorded, 90 come under the heading of acute. In none of these was ipecacuanha used, the treatment consisting of monsonia in from two to four drachm doses every four or six hours. In a few of the later cases the action of the monsonia was supplemented by pilula plumbi cum opio; but it is interesting to note in this case that the patient had, previously to coming under treatment, been taking both tincture of opium in full doses and pilula plumbi cum opio, and that in spite of the exhibition of these drugs the symptoms had become steadily worse, showing that the pilula plumbi cum opio alone was ineffectual as a cure. My reasons for adding pilula plumbi cum opio to the treatment in some of the later cases was that the specimens of monsonia from which the tincture I was using was made had been gathered nearly three years previously and appeared to be losing to some extent its activity. It is a recognised fact among pharmacists that some drugs, especially when kept in the dry state in hot climates, steadily deteriorate in quality, and in my experiments I have found that this was apparently the case with monsonia. The average number of days that a patient was under treatment was 2·3, which is certainly far below the average of any statistics which I have been able to consult under any other form of treatment.

Although, according to some of the Indian authorities, the records of the treatment of acute dysentery with ipecacuanha show almost equally good results, monsonia has one great advantage in that it requires no special precautions, and can be taken by the patient just as any other drug without the necessity even of remaining in bed. Secondly, chronic dysentery, on the other hand, has not up to the present time proved amenable to any form of treatment, and has been hitherto looked upon as incurable and very frequently fatal, but the records go far to prove that monsonia is as efficacious in the treatment of chronic as in that of acute

dysentery. Out of the 100 cases I have reported, 10 were chronic, and of these 9 made complete recoveries, and were under treatment for 8·1 days on the average. Even in the one exceptional case the dysentery was cured, but the constitution was so exhausted by the long illness previous to treatment that the child succumbed to cancrum oris. Seven of the chronic cases recorded as being cured were under observation for periods varying from one to four years, no relapses occurring. One case was lost sight of after six months, during which time the patient had no recurrence. The remaining case was the only one to my knowledge in which a relapse occurred; this was due, in my opinion, to the tincture of monsonia having lost some of its qualities, the plants from which it was made having been kept too long. This case was soon cured, however, by a fresh infusion of the drug made from plants collected on the patient's farm. The monsoniæ belong to the order Geraniaceæ, of which they form a genus. A great number of varieties are found in Southern Africa. The plants I have used come under the varieties Monsonia ovata and Monsonia Burkei. Several species are known to have astringent properties, due to the tannic acid which they contain, chiefly in the roots. Their action as astringents is, however, weak, and I do not think that the results obtained by the preparations I have used in dysentery were at all due to their astringent properties. This conclusion is borne out by the fact that the drug appears to have very little effect on ordinary diarrhœa, and also that the preparations made from the dried flowering plant without the root were in dysentery quite as effective as, if not more so than, those in which the root was used, and in which certainly a large proportion of tannic acid was present.

Judging from the number of cases which I have now treated, I feel convinced that the plant has a specific action on the poison of dysentery, apart from any mere astringent properties. In the beginning of 1896, through not being able to obtain specimens of the plant, I was obliged to return to the use of pharmacopœial drugs. This was unfortunate, as during the Matabele rising, from March to July, 1896, an epidemic of dysentery occurred at Bulawayo, which would have afforded me very valuable materials for further researches with regard to the action and the peculiar properties of the drug. Though so far non-plussed, I was still able to cope successfully with acute cases of dysentery, and it may be of general interest to give some account of the treatment pursued. One of the first cases which came under treatment was that of a child, four years of age, suffering from acute dysentery. I ordered four grains of pulvis ipecacuanhæ compositus with four grains of pulvis kino compositus every six hours and an enema of warm

water twice a day. The child appeared to be all right the next day, but two days after the mother sent for me again, when the dysentery was as bad as ever and prolapse of the rectum was commencing. The powders seemed to have no effect. I ordered the enema to be continued and three grains of phenacetin to be added to the powders. The result was excellent; the child rapidly recovered and no relapse occurred. Most of the subsequent cases occurring in this outbreak were of a very acute form, often associated with a good deal of vomiting and sometimes high temperature. The treatment, briefly stated, was as follows:—A mixture containing one-and-a-half drachms of liquor bismuthi, one minim of acidum hydrocyanicum dilutum, ten minims of liquor morphiæ hydrochloratis and water to one ounce was given every four hours in cases where there was much vomiting. Ten minutes after each dose of the mixture a powder containing ten grains of pulvis ipecacuanhæ compositus, ten grains of pulvis kino compositus, and five grains of phenacetin was administered. In other cases ten grains of bismuthi sub-nitras was given before or with the powders. Where much fever was present, a powder containing eight grains of quinine with eight grains of phenacetin was given night and morning. In cases in which the attack was of more than forty-eight hours' standing an enema of about two quarts of warm water with a little Condy's fluid was given. The patients were not kept in bed except in severe cases. Meat diet was strictly forbidden. Most authorities incline to the opinion that astringents and full doses of opium are not only useless but do much harm in the acute phase of the disease, and I think the foregoing powder would certainly come under that condemnation. The results, however, were extremely satisfactory in all the acute cases, which numbered somewhere about forty. I attribute their success to the addition of the phenacetin and also to the administration of the enemas.

I make it a rule to inquire on first seeing a patient whether any fæces have been passed during the last twenty-four hours, and unless the attack is quite recent I invariably find that such has not been the case. I then order an enema of two or three pints of warm water with a little Condy's fluid in it. The patient as a rule passes a large quantity of fæcal matter and experiences a great feeling of relief, the tenesmus disappearing for the time being. Very weak solutions of any disinfectant are applicable, with the one exception of bichloride of mercury; this drug in the weakest solutions causes acute pain. In some cases, where the ulcer is low down in the rectum, the sphincter ani will be found to be paralysed temporarily. It is then impossible to evacuate the small intestine by means of enemata. In these cases it is necessary to give castor oil. In the

subsequent treatment of dysentery, provided the tendency of the small intestine to become blocked is counteracted, no harm can result from the use of opium and astringents, combined with such diaphoretics as ipecacuanha and phenacetin; and, judging from my experience in a large number of cases, I feel convinced that they materially assist in the cure of the disease.—*Lancet, February* 13, 1897.

8.—THE DIAGNOSIS OF MALARIAL FEVER.

By William Osler, M.D., of Baltimore;
Professor of Medicine in the Johns Hopkins University.

[The following is taken from Professor Osler's paper:]

I would remind you that there are three well recognised varieties. (1) The tertian organism, which matures in forty-eight hours and produces quotidian paroxysms if two groups are present, tertian if there be only one. This is the common parasite of the simple intermittents of the spring and early autumn. (2) The quartan parasite, which has a cycle of development of seventy-two hours, and, if only one group of organisms is present, causes the regular quartan intermittent; if two or more groups are present, the paroxysms may be daily or every other day. The quartan parasite is a rare form. There have been only about fifteen cases among 1,000 examined at my clinic. (3) The parasite of the irregular malarial fevers (estivo-autumnal form)—the remittent, continued, and pernicious types. This variety is smaller, less easily recognised, is not so abundant in the peripheral circulation, and, in the pernicious forms, may have curious seats of election, as in the brain or intestines. It is further characterised by the development of the crescents, a distinctive and characteristic form of great moment in diagnosis.

I.—*The simple intermittents.*—The tertian infection, the only common one in this country, is characterised by a paroxysm developing at the end of forty-eight hours if a single group of parasites is present; at the end of twenty-four hours if two groups exist, one of which matures every day. There are three features by which an ague can be recognised: (*a*) The character of the febrile paroxysms. It is found that the duration of the pyrexia from the rise above 99° F. to the fall to normal is from eleven to twelve hours, rarely shorter, still more rarely longer. (*b*) The blood shows the hæmatozoa in all stages of development. Practically they are never absent in uncinchonised individuals. There is no leucocytosis. (*c*) The administration of quinine checks the further development of paroxysms and causes a rapid disappearance of the parasites.

It is not sufficiently recognised in the profession, particularly in malarious regions, that pulmonary tuberculosis very frequently sets in with chills and fever. Abscess of the liver is almost always at first treated for malaria. The recurring chills and fever, and the sallow tint, lead, not unnaturally, to this mistake. Another condition of the liver is a common source of error, namely, gall-stone fever. I do not refer to the chill during the passage of the gall-stone, nor to the recurring chills in the pyæmia of suppurative cholangitis, but to the recurring paroxyms of intermittent fever for months or even for years in connection with the lodgment of a stone in the common duct.

II.—*The irregular malarial fevers.*—In reality the chief difficulty in the diagnosis of malaria is in the recognition of the remittent fevers which simulate typhoid, of certain pernicious types with special localisation, and of certain chronic infections. Every year we have a few cases of malarial remittents which are at first mistaken for typhoid fever, and tubbed. In certain forms of infection with the organism of the irregular malarial fever the parasites are at first very scanty in the peripheral blood, and may be, in fact, overlooked for some days. With us it has been very much more common to mistake malaria for typhoid fever than typhoid fever for malaria. The following are the important points of differentiation :—

(1) *The mode of onset.*—In malarial remittent fever there is not the initial period of malaise and ill-health; the onset is more sudden ; chills are much more frequent. They are not, however, always present. On the other hand, chills at the onset of typhoid fever are not very uncommon. Of 79 cases treated during the sixth year of hospital work, in which this point was inquired about particularly, there were 13 in which the disease began with shaking chills. Epistaxis is rare in malaria.

(2) *The fever*, which presents three points of great importance in the differentiation. (*a*) The slow, step-like ascent to the fastigium is not met with in malaria. The rise is abrupt, and on the first or second day the temperature may reach 104° or 105° F. (*b*) The malarial remittents never have the remarkable continuous type of fever which we see in typhoid after the fastigium is reached. No other disease, except pneumonia, presents the same persistent pyrexia, with perhaps not more than a degree or a degree and a half of diurnal variation. This is characteristic particularly of the second week of the disease, or from the fifth to the twelfth day. In the estivo-autumnal infections the remissions are, as a rule, marked—two, three, and and even four degrees. (*c*) In the later stages, say in the third week, when in typhoid fever there are wider excursions and marked remissions, the pyrexia in the remittent fever becomes much more broken, is apt to be more intermittent in character, and the temperature may even be subnormal for some hours each day.

(3) *The general appearance of the patient.*—During the first week of malarial remittent fever, the aspect may be typically typhoidal, the expression dull and heavy, and the cheeks flushed. Marked anæmia and the sallow tint may not develope until the patient has been under observation for a week or more.

(4) The gastro-intestinal, bronchitic, and nervous features offer less valuable criteria of differentiation. Herpes on the lips, when present, is important because of the great rarity in typhoid fever and the great frequency in malaria. The tongue in remittent fever is usually more coated, pasty, and white early in the disease. Bronchitis is common in both. Mental hebitude and delirium, while more common in typhoid fever, are not at all infrequent in the severer types of the estivo-autumnal fever.

(5) *The examination of the blood.*—The very first slide looked at may give the diagnosis. In other instances repeated examinations may be necessary. A systematic examination of the blood in any estivo-autumnal form is sure to be rewarded by the detection of perfectly distinctive forms, if not of the intracellular, of the characteristic crescents. Widal's test, too, will prove of great use.

(6) Quinine has no influence on typhoid fever. Properly administered, it checks the malarial remittent fever in from two to four days.

There are other points of differentiation, but these are the most important. We know nothing of typhoid fever with malarial features; on the other hand, we know a good deal of malaria with typhoid features.

How often do combined infections occur with the hæmatozoa and Eberth's bacillus? Very seldom; much less frequently than with the pneumococcus and with the ameba coli.

III.—*Spurious malaria.*—I suspect the Eberth bacillus, not the plasmodium malaria, is responsible for the major part of these cases. A widened experience has only served to strengthen my conviction that in the practical diagnosis of the infectious diseases, the discovery of the hæmatozoa of malaria by Laveran takes rank with the finding of the tuberculosis bacillus by Koch.—*Medical News, March* 6, 1897.

9.—MALIGNANT SYPHILIS.

By Albert Neisser, M.D.,
Professor of Dermatology in the University of Breslau.

[The following is taken from Dr. Neisser's article in the *British Journal of Dermatology*, January, 1897:]

By the term "malignant syphilis" we understand a severe form of the disease, characterised by certain symptoms differing

rather in their nature than in mere severity, from the usual forms of the malady. It will be understood, therefore, that every case of severe syphilis must not be included under the designation of "malignant." For example, when syphilis is rendered a dangerous affection on account of the relations of the organs attacked, or by reason of some previously existing morbid condition, the term "malignant" is not appropriate. The term "*syphilis gravis*" is more suitable to such forms of the disease. Again, in those cases in which ulceration occurs in the early stages of the "secondary" period, the designation of "malignant" will be incorrect, while such a term as "*syphilis abnormalis gravis*" might express the condition with more accuracy.

The following points may serve to denote the characters of malignant syphilis :—(1) Pronounced constitutional symptoms due to the syphilitic intoxication, such as fever, anæmia, cachexia, loss of weight, sleeplessness, headache, arthralgia, and muscular pain. Among the less common symptoms are to be mentioned epileptiform fits, coma, and transitory disturbance of the motor and co-ordinating functions. (2) The skin and the mucous membranes of the mouth and nose present extensive, irregularly distributed lesions, consisting of large pustules and ulcers (rupia, ecthyma, &c.). These manifestations, which are rarely to be met with in the internal organs, manifest themselves within three to six months after infection, and frequently recur during a period of several years. (3) The pleomorphic character of the skin lesions is another distinguishing feature. This is produced not only by the striking forms of the many lesions present, but also by the fact that in this case, much more than in ordinary attacks of syphilis, the individual efflorescences succeed each other with great rapidity, so that the opportunity is afforded of observing various stages of the disease in the same patient at the same time. Thus one may note the presence of large papules and nodes, commencing ulceration, large deep ulcers, ulcers covered with crusts, and again others in all the stages of healing and cicatrisation. (4) In addition, we may observe lesions characteristic of the milder forms of the disease, such as papules, &c., affecting the mucous membranes at the time when the skin shows the malignant disease. Some authors, indeed, look on the simultaneous occurrence of the milder and more severe series of lesions as a regular feature of this type of syphilis. It should also be mentioned that the ulcerative lesions show a remarkable tendency to select the head and face. (5) Another point of importance is the early development of ulceration at the time when one would expect the roseola to appear. In other cases the ulceration develops from the deeply seated, rapidly growing, reddish-brown syphilomata. As the

consequence of the two conditions preceding the appearance of ulceration we find that certain authors have distinguished two varieties of the exanthem

The occurrence of hemorrhages in syphilis must be regarded as a complication which greatly increases the severity of the attack, but it does not necessarily cause malignancy. Scurvy must also be regarded as a serious complicating factor. Intermediate forms between ordinary and malignant syphilis are also to be met with, the lesions consisting of papulo-squamous papules, pustules, and superficially ulcerated nodules. These forms occur usually in women whose health is seriously affected from some other cause.

Malignant syphilis must be regarded as a secondary manifestation of the disease, not only on account of the early appearance of the lesions, but also on account of their multiplicity and their manner of distribution, and on account of the severe constitutional symptoms which characterise this early period of the affection. It differs, however, from the usual secondary stage with its macular and papular eruptions on account of the rapidity with which ulceration and destruction of tissue takes place, and also on account of the failure of mercurial treatment to exert any beneficial influence on the lesions.

Although ulceration is commonly observed in malignant syphilis, yet the type differs from that which we are accustomed to observe in the tertiary or gummatous stage. The ulcers of the malignant form are characterised by :—(1) The rapid development and destruction of syphilomata; (2) the absence of serpiginous outline ; (3) the absence of the constancy of the aggregated form of the skin lesions so typical of the tertiary stage ; (4) the uncertainty of their reaction to the therapeutic employment of potassium iodide.

In favour of the exclusion of malignant syphilis from the tertiary group of affections may be mentioned the following points :—(1) The simultaneous occurrence of typical secondary symptoms, patches on the buccal mucous membrane, ecthyma and rupia on the skin, with the malignant disease ; (2) the occasional appearance of typical macular and papular eruptions after the ulcerative lesions.

Malignant syphilis may exist either in the acquired or the hereditary form. Personally I am convinced there is strong reason for the belief that the cases of severe hereditary syphilis, characterised by "colliquative" and suppurating lesions, must be considered as being malignant in character.

We must conclude, therefore, that malignancy is due to a peculiar susceptibility of the affected person, which shows itself by :—(1) The rapid destruction of the syphilitic granuloma,

which is typically of long duration (especially in the early stage), and only gradually disappears. (2) the excessive reaction of the constitution against a "toxin," which, as a rule, does not produce such marked symptoms of intoxication (fever, destruction of the blood, nervous irritation, troubles of nutrition, &c.). This sensitiveness of the individual is a special phenomenon, and must not be confused with debilitating conditions which may induce a bad case of syphilis gravis, such as alcoholism, gout, scurvy, diabetes, nephritis, mercury and lead poisoning. Very often strong and healthy men devolope malignant syphilis, while weakly and sick persons may show benign attacks.

In my opinion, neither the bacteriological investigation of these local lesions, nor the therapeutic results obtained by the use of any of the antiseptic applications, give any support to the doctrine that the "malignant" phenomena are the result of a mixed infection. Nor is there any substantial support for the hypothesis that malignant syphilis is due to the introduction of an abnormally large quantity of the virus at the time of inoculation.

The following facts appear to me to be of greater value in explaining the diminished prevalence of cases of malignant syphilis :—(1) The general adoption of improved methods of mercurial treatment; (2) the use of antiseptics; (3) the greater care in the treatment of both the local and general manifestations ; (4) the improvement in general sanitary conditions.

Phagedænic ulceration and rupia may, according to some authors (Hutchinson, Mracek, and others), occur even in those patients who have become re-infected with the disease, but this observation, especially in the form in which it is stated by Hutchinson, differs widely from the experience of nearly all other authors. In the meantime I wish only to mention the point, but I hope on another occasion to deal more fully with this subject.

The localisation, nature, and progress of the primary lesion (*e.g.*, extragenital) have not the slightest effect on determining an attack of malignant syphilis.

As the result of experience it has been found that patients suffering from malignant syphilis bear mercurial treatment very badly, and great precaution must be taken in administering the drug. No success whatever is to be expected from "forced cures." In former times, as is well known, the rule was laid down that in malignant syphilis mercury should never be given. This canon, I believe, is the result of a somewhat exaggerated fear, although I quite think that in these cases great care should be taken. For instance, although I have the greatest confidence in the use of insoluble salts of mercury in the treatment of syphilis, yet this method must not be employed in the treatment

of malignant syphilis ; for should alarming effects follow the use of mercury, and we are using the process of inunction, or of injection of the soluble salts, we have it in our power to stop the administration of the drug at once. In the case of the insoluble salts the influence of the mercury which has been injected lasts for a much longer time, for days or even for weeks. Fair amount of success also follows the use of the iodide of potassium, especially if it is administered when fever is present. In cases of malignant syphilis it often happens that a course of anti-syphilitic treatment, even when persevered in for years, has no effect whatever upon the condition of the patient. In such cases the only possibility of benefiting our patient is by the use of tonics (arsenic, strychnine, iron, quinine, and baths, especially sea-baths), and the external use of sulphur, in the form of sulphur ointment or the sulphur bath. Of the latter form of treatment it may be claimed that it has often proved to be very useful. Quinine if administered in such cases exerts both a tonic and a specific influence. Sea-baths, or a long stay at the seaside, is regarded by Hutchinson, as of great benefit to the patient, and cases are described by him and also by Epstein, in which long-continued anti-syphilitic treatment was of no avail, but recovery ensued when the patients, after residing for some time at the seaside, were enabled to bear mercurial treatment.

In the later stages of the disease the patient bears mercurial treatment well, and his condition improves wonderfully. Very early commencement of mercurial treatment and its administration in large doses has nothing to do with the development of the malignant form of the disease ; and the same remark may be made of the "chronic intermittent" method of treatment. It must be stated, however, that every case of severe syphilis, especially of malignant syphilis, will be rendered decidedly worse by the ignorant use of forced mercurial treatment. But Fournier is not responsible for such errors of treatment, for he himself insists strongly that the individuality of each case must be borne in mind, and that the pauses between the courses of treatment must be properly observed.

I have also made trial of the anti-syphilitic serum in some cases of malignant syphilis, but the condition of the patients remained almost the same after as before the treatment. These trials perhaps deserve some consideration as regards the value of the serum treatment of syphilis. From theoretical considerations, I quite believe that the serum derived from syphilitic individuals has the power of conferring immunity on a patient, and perhaps of aiding in the process of cure. Yet at present I do not think that there is a single case on record to prove that we have made any actual advance towards

this goal, and I do not hesitate to consider all that has been published up to this date on the subject as premature. It may be possible that some cases have been treated successfully with the serum, but we are quite unable to say in what way success has been brought about. The course of syphilis is so manifold and inconstant in different persons that further explanation is necessary to show that any therapeutic success has been attained. The fact that I have used the serum in malignant syphilis, where any improvement could not have escaped notice, has given me little encouragement to persevere in this form of serum therapy, especially as I believe I carried out the treatment more energetically than any of the authors whose writings are known to me.

Many years ago, and long before any observations on the subject had been published, we tried the serum treatment at the hospital at Breslau. The serum, which was used in the form of large intravenous injections up to 200 cubic centimetres, was obtained from syphilitic patients in various stages of the disease. As already remarked, I have never been able to convince myself of the fact that the progress of the disease was in any way influenced. One important observation we were enabled to make in connection with the treatment, namely, that injections of the serum made in healthy persons produced no obvious result; but whether these individuals were rendered "immune" or not I am, as yet, unable to decide.

The prognosis of malignant syphilis as to the final result is generally good. This observation, however, applies only to those typical cases in which the skin only is involved. In cases of this kind I have always observed that the disease took a favourable course, and, so far as I have been able to follow them, tertiary manifestations have not occurred. Some of these patients married at a comparatively early period after infection, and neither their wives nor their offspring have shown any signs of infection.

10.—ON THE CAUSATION OF LEPROSY, AND THE EXTENT OF ITS OCCURRENCE IN EUROPE.

By Karl Grossmann, M.D., F.R.C.S. E.

The paper is based on observations of cases in Iceland in 1895, and in Egypt in the early part of 1896, made primarily for the purpose of studying the ocular manifestations of leprosy.

The author shows that leprosy is much more frequently met with in Europe than is generally supposed, and that many cases are overlooked in the early stages, especially in the anæsthetic

form. The most important question to consider with regard to leprosy is, whether it is due to contagion or heredity. The theory that it is due to fish-eating is not corroborated by any proof, and must be given up unless some convincing evidence is brought to light.

Equally uncorroborated is the hypothesis of an extra-human habitat of the virus of the disease. As to the question of heredity, Iceland is peculiarly well adapted for deciding it. The people have careful records of their ancestry, often reaching back 1,000 years without a break. The evidence of the genealogy is strongly against the theory of heredity, and a great number of facts tell in favour of infection. The great amount of crowding and the extraordinary absence of cleanliness which prevail in many of the farms would tend to propagate any infection if it existed, and the people manifest an almost incredible indifference as regards the possibility of acquiring this loathsome disease from persons infected with it. Some remarkable illustrations of this are given.

The object of this paper was to draw the attention of the medical profession in this country to the disease, to the possible occurrence when but little expected, and to the necessity which exists of making provision for the proper and safe care of such cases when they arise. Cases that have actually occurred within a few weeks are quoted. The medical treatment of leprosy has hitherto been of no avail, as a careful scrutiny and observation of the reported cures tends to show. Until a successful treatment has been found, isolation is the only means known of arresting the spread of the disease. Such an isolation need not be on the penitentiary lines.

[In the discussion on Dr. Grossmann's paper in the Liverpool Medico-Chirurgical Society, the following remarks were made :]

Professor Boyce thought that most of the members present, like himself, would feel surprised at Dr. Grossmann's statement that leprosy was on the increase. Leprosy had decreased in England and in France, and he should have thought generally in Europe. He thought, therefore, that such a statement should be thoroughly proved. There was no doubt that more cases were recorded and tabulated, owing to better facilities of observation.

Dr. G. Stopford Taylor said that in a non-leprous country like England, the disease in its early stages might easily escape recognition, especially in the anæsthetic form. At the recent Dermatological Congress he heard a wide divergence of opinion respecting one case, as to whether the patient was suffering from anæsthetic leprosy or scleroderma. Dr. Radcliffe Crocker had achieved marvellous success in the treatment of two lepers with injections of corrosive sublimate.

In reply to the questions asked by various members, Dr. Grossmann remarked that, with reference to the treatment by mercurial injections and other medications, sight ought not to be lost of the fact that sometimes, without any treatment, a standstill, and even an undeniable improvement, in the appearance of the tuberous form of leprosy has been observed, and has lasted for some time ; but in almost all these instances such improvement or arrest was only temporary if the observations were carried on long enough. There is, however, no need to despair of finding ultimately a successful treatment.

Regarding the question as to whether heredity manifests itself more as a predisposition, as in tuberculosis, or as a taint, as in syphilis, the analysis of Icelandic cases speaks against heredity altogether, and in favour of infection.

An increase of leprosy in Europe has been reported of late from Eastern Prussia and from Russia.

The relationship between the occurrence of leprosy with that of syphilis and tuberculosis seems not to have received any special attention. As a matter of experience, syphilis is practically non-existing in Iceland, but tuberculosis occurs often, as mentioned in the paper, while syphilis is not rare in Egypt. An occurrence of two or all three of these diseases in the same individual may possibly be observed.

With regard to inoculation of animals, experiments with leprosy have hitherto failed as completely as with syphilis to yield indisputable results.—*Liverpool Medico-Chirurgical Journal, January*, 1897.

11.—BUBONIC PLAGUE.

By Patrick Manson, M.D., F.R.C.P. Lond., LL.D.,
Physician to the Seamen's Hospital (Albert Dock Branch), and Lecturer on Tropical Diseases, St. George's and Charing Cross Hospitals.

In the light of modern research plague may be defined as a specific, inoculable, and otherwise communicable epidemic disease common to man and many of the lower animals, characterised in its malignant phases by fever, the development of buboes, a rapid course, a very high mortality, and the presence in the blood—but especially in the lymphatic glands, spleen, and viscera generally—of a specific bacterium. Modern research has more particularly brought out the following points :—(1) Plague a disease of the lower animals.—Lowry notices the mortality among rats and pigs during the Pakhoi epidemic in 1882. Dr. Alexander Rennie says:—"The same

circumstance was noted in Canton both previous to and during the epidemic (1894). From districts of the city where the disease had lasted some time rats had entirely disappeared, but kept on dying in other parts to which it subsequently extended. They would come out of their holes in broad daylight, run and tumble about in a dazed condition, and die." Not only are vertebrates attacked, but, according to Yersin, certain insects are susceptible. In his laboratory in Hong-Kong this distinguished investigator observed that the flies succumbed to the disease; and he proved this by injecting a trituration in bouillon of one of the dead flies into a guinea-pig, which subsequently died with all the symptoms of true plague. In Hong-Kong and China generally pigeons and fowls did not appear to be affected by the virus; it would appear, however, from accounts recently received from Bombay, that the former, under certain circumstances, are also susceptible to the disease. These facts as regards plague in the lower animals are of great importance in their bearing on the spread of the disease to man, and on the question of the practicability of an efficient quarantine. One can understand that as against the introduction of malignant plague by man a rigid and properly devised and carried out quarantine might be effective; but it is difficult to see how it would be possible to keep rats, mice, birds, and flies from overstepping a sanitary cordon, no matter how carefully guarded, and from flying, swimming, or smuggling themselves ashore in cargo from ships, and from eluding in other ways the vigilance of the quarantine officer.

(2) Two well-marked types of plague epidemics—a benign and a malignant.—During epidemics of malignant plague cases of *pestis ambulans* are now and again encountered. These are probably the result of infection with the prevailing type of plague germ, their mildness depending on individual idiosyncrasy rather than on the absence of virulence in the germ. Though mild as regards the particular individual, they are nevertheless capable of transmitting plague of the ordinary malignant type. But it is not this type of case that is indicated by the term "benign plague"—*pestis minor*. The latter is essentially different, depending, it is believed, on the quality of the germ. The virulence of the plague germ differs considerably in different epidemics, and even in the same epidemic at different periods of its progress; but it is now well known that extensive epidemics of bubo, accompanied by little or no constitutional disturbance, sometimes precede for months, or even for years, sometimes follow, and sometimes occur independently of epidemics of the malignant type of the disease. Cabiadis and Tholozan describe such epidemics of *pestis minor* as occurring in Mesopotamia. How are these non-virulent epidemics to

be explained? Their true nature and significance have just been scientifically interpreted by investigations in Calcutta. Hitherto such epidemics were suspected of being allied to plague, of being in reality a mild form of the disease, but there had been no proof of this. It would appear that for some time back an epidemic of a bubonic disease unattended with any considerable mortality has been in progress in Calcutta. Drs. Cobb and Simpson, by a bacteriological examination of the blood and buboes of the patients, have shown that the disease is associated with a micro-organism possessing all the morphological, tinctorial, and cultural characters of the plague bacillus. This discovery, if confirmed, is one of great importance, for, taken in conjunction with the historical fact alluded to—that epidemics of a similar innocent nature have culminated in outbreaks of malignant plague—it brings us face to face with the possibility—or, rather, probability—that what at one time may be a comparatively harmless bacillus, may subsequently, in some unknown way, acquire malignant characters and give rise to disease of the very gravest description. Here again arises a difficulty about quarantine. What quarantine officer would detain every isolated case of mild bubo? And how is he to ascertain that every one of a caravan or ship's company is free from slight enlargement of one or two glands? Must he strip them all? And, if he did ascertain the presence of enlarged glands, how would it be practicable to pronounce on the nature of the enlargement?

(3) The plague is caused by a micro-organism, the virulence of which is susceptible of great modification by certain, as yet imperfectly understood, circumstances.—The proofs are now very strong, if not complete, that the specific cause of plague is the cocco-bacillus, which was discovered simultaneously by Kitasato and Yersin during the recent Hong-Kong epidemic. This microbe occurs in great profusion in the characteristic buboes—sometimes in pure culture, but more often associated with the bacteria of suppuration. The same bacterium is also present in the spleen, intestine, lungs, kidneys, liver, and other viscera, and also, though in smaller numbers, in the blood. It is a bacillus, or cocco-bacillus, closely resembling, morphologically, the bacillus of chicken cholera. It can readily be cultivated in bouillon, blood serum, and the usual media ; and its cultures, on being injected into the lower animals, give rise to typical symptoms exactly corresponding to those produced in the same animals by inoculations made directly from plague patients. From these animals the bacillus can be recovered, recultivated, and, if again injected, give rise to typical plague. There, therefore, can be little doubt that the bacillus of Kitasato and Yersin is the true germ of plague.

In Hong-Kong Yersin claimed to have demonstrated the presence of the same bacillus in the soil of plague-infected houses; but, strange to say, these soil-plague bacilli were not virulent. These facts suggest that the mild bacillus recovered from the soil and the epidemics of *pestis minor* already alluded to, were correlated in some way to this very marked capacity for attenuation exhibited by the exceedingly mutable germ.

(4) The plague can both be prevented and cured by a practicable serum-therapy.—Yersin, Calmette, and Borrel have shown that intravenous, intraperitoneal, and subcutaneous injections of gelatine cultures of plague bacillus mixed with a little bouillon and heated for one hour at 58° Cent., if employed in doses just short of producing a fatal issue, and repeated three or four times at intervals of fifteen days, render rabbits immune to plague bacillus. They further found that the serum of such an immunised animal injected into an unprotected rabbit exercised both an immunising and a therapeutic influence. They also immunised a horse by intravenous injections of living virulent cultures, and the serum of this animal was both preventive and curative of inoculated plague in rabbits, guinea-pigs, and mice. The next step was to test the value of this serum on man. Recent accounts lead us to infer that this has been done, and with the most signal success. Should further experience confirm this brilliant result, the serum treatment of plague cannot fail to become the routine treatment of this the most fatal of epidemic diseases. Further proofs were collected in Hong-Kong that plague is the disease of the poor, the under-fed, and the over-crowded; that those who live in good, clean, and not over-crowded houses are practically safe, although the disease may be raging in the slums around them. The facts that the fæces, the urine, and sputum contain the bacilli, and that plague is communicable by food, are of prime importance to the hygienist. Lowson insists that the public latrines were among the principal agents for the diffusion of the disease. He has further conclusively shown that plague is but feebly infective—that is to say, in the sense that the virus can be acquired through the atmosphere in the same way as measles or small-pox; that therefore doctors and nurses in hospitals run little risk; that it is principally a place disease—"floor disease," he calls it—the germ rising as dust when the dirt on the floor is disturbed; that it may be found in the upper storey as well as on the ground floor; and that, therefore, it is not necessarily a telluric miasma. He attaches great importance to thorough disinfection of plague-infected houses. Aoyoma believes that in the great majority of cases the bacilli enter through wounds of the surface—his own case being an instance in point.—*The Practitioner*, *January*, 1897.

12.—RICKETS AND ITS TREATMENT.

By Professor Heubner and Dr. Sterling.

Heubner (*Wiener Klm. Wochenschr*, 1896, ix., 879), in an address delivered before the Gesellschaft der Charitéaerzte in Berlin, expressed himself as not in accord with Kassowitz, who maintains that rhachitic disease of the bones is an inflammatory process, and that all symptoms are to be explained by a pathologically increased vascularisation of the osteogenetic tissues. He sides with Pommer, who says that the growth of the bone is a perfectly normal one, and that the only pathological difference is the absence of lime salts, all other changes, which are looked on by some as inflammatory symptoms due to irritation, namely, the swelling of the epiphyses, the exuberant growth of the cartilage cells, and the periosteal thickening, Pommer declares to be secondary changes of rhachitis, which are not due to the disease itself, but are a result of the weight of the body and the distortion of bones and its periosteum by muscular traction, &c. From whence this defect of lime in the growing bone arises is not yet known; it certainly cannot be due to a deficient quantity of lime-salts being taken into the economy, nor, according to experiments by Rudel, because the rhachitic individual is not able to absorb lime into the blood. He is rather inclined to believe that there is some property of the blood wanting to allow the absorbed lime to become free, namely, a sufficient alkalinity of the blood, from a chronic saturation with carbonic acid gas.

To Vierord's objection that in diseases in which the blood has a particularly acid reaction (*e.g.*, in diabetes) no rhachitis can be demonstrated, may be answered that no time is given the organism to become rhachitic through the occurrence of diabetic coma; besides, in these cases growing bones are not usually met with. He has for many years abandoned the treatment of severe cases of rhachitis by phosphorus, stomachics, iron, &c. Senator, however, lays stress on the administration of phosphorus in laryngeal spasm, which is so frequently met with in rhachitis, where he found it of very great service. The treatment of rhachitis with thyroidin had lately been introduced by Heubner. A specific action on the bones has not been demonstrated, but many young children who had been much reduced by diarrhœa showed a gain of weight under this treatment, as well as a very marked general improvement in a short time. Merck's preparation was used, beginning with a dose of 0·1 grm. every second day and then increasing to a daily dose, the treatment being continued for several months. This treatment, however, is only possible when a continuous control

over the patient can be exercised, on account of intercurrent disturbances which might otherwise occur.

Sterling (*Archiv. für Kinderheilkunde*, 1896, xx., 43) says that impure air is a predisposing element in rickets. Parents ought not to keep children within doors during the winter season for fear of catching cold. They should be daily taken into the fresh air, without regard to the season of the year. Pure air should circulate in the dwellings. An occasional airing by ventilation is not sufficient, and it is of primary importance to keep the air pure by permitting no overcrowding, bad lighting, unnecessary furniture, dusty walls, floors, &c. The skin of the children should be kept scrupulously clean, and soiled clothing, bedding, and the chamber-pot should be kept out of the sleeping department. It is also of great importance to allow the children to play in the sun as much as possible; no specific diet should be used, but a mixed one, suitable to the child's age, should be encouraged. For a child eight to nine months of age pure milk is not sufficient food.

Mountain or sea air is also to be recommended. Sea baths not only keep the body clean but act as a stimulant to metabolism. With some children sea-bathing does not agree; these should be given tub-baths with an artificial salt solution, but they should only be used every two or three days, and should not last longer than five to ten minutes.

On account of the bone lesions in rickets, these children should not be encouraged to sit, walk, or stand for a long time at an early age, nor should they be carried long on one arm. The bedding should lie on a firm and even support. These children ought never to be lifted up by their hands or arms, but should always be supported under the axillæ. When a deformed thorax is present, compressed air should be ordered for inhalations, massage used for the weakened muscles and joints, and galvanism applied along the spinal column, together with the electric bath.

Medicinal Treatment.—Lime is losing its long-maintained reputation in this disease. The most important remedy to-day is phosphorus. The opponents of the latter (Baginsky, Henoch, Monti, &c.), are in the minority. Phosphorus may be given with cod-liver oil 0·01:100, in teaspoonful doses twice a day. Other fats are sometimes used as substitutes for cod-liver oil. The author concurs with enthusiasm in the praise accorded phosphorus by Kassowitz, and uses full doses of the remedy without regard to complications. Besides phosphorus some other remedies are useful—iron, for anæmia, Ferr. lact., 0·03 to 0·05 twice daily, or ℞ Tr. ferri. chlor.; ferri. pepton.; tinct. rhei. vinos., 20·0; potas. acetat., 10·0; vin. antimon., 5·0; M sig.—Five to thirty drops three times daily.

In threatening suffocation from laryngeal spasm, the clothing should be rapidly removed, plenty of fresh air admitted, ammonia held to the nose, the face sprinkled with cold water, the tongue pulled forward, artificial respiration induced, and electrofication of the phrenic nerves tried. No whippings should be administered by the mothers to these children on account of nervous symptoms, which are often attributed to wilfulness, but patience should be exercised with this morbidly irritable condition.—*Pediatrics*, *February* 1, 1897.

13.—THE TREATMENT OF PERNICIOUS ANÆMIA.

[The following is taken from a leading article in the *Medical Record*, November 14, 1896 :]

A final decision cannot yet be given as to whether the disorder is dependent principally upon excessive blood destruction or upon deficient blood production, but the statement can be safely made that the affection is no longer looked upon as primary or idiopathic, and doubt may exist in some cases as to its progressive and pernicious character in the sense in which it has been customary to employ these terms. A growing experience has taught that profound and fatal anæmia may result from a variety of causes, sometimes perfectly obvious, but at other times so obscure as to escape detection at the hands of the keenest clinical observer. Sufficient evidence has accumulated to justify the conclusion that in a not inconsiderable proportion of cases the blood depravity results through the gastro-intestinal tract, perhaps in consequence of poisonous products there generated, or by infection, or from the presence of parasites of other character. These advances in our knowledge of the etiology of the disease have not been without their influence upon a selection of the means employed in its treatment. Thus, whenever a source of hemorrhage or other wasting discharge can be discovered, the first essential step is to secure its control. When animal parasites are found to be present in the intestinal tract their extrusion must be effected by appropriate means. When it is suspected that the condition arises in consequence of intoxication, resulting from some failure in the normal digestive and assimilative processes, measures calculated to aid gastro-intestinal digestion and disinfection will be indicated; if the intoxication be dependent upon the retention of metabolic products intended for excretion, laxatives—and especially calomel and salines—may be used with advantage.

Upon the assumption that the excessive hæmolysis is supposed to take place in pernicious anæmia as a result of the presence

of toxic matters in the gastro-intestinal tract, Gibson was led to use two-grain pills of beta-naphthol, given twice or thrice daily, in the treatment of a case of that disorder, with the happiest results. Acting upon the same thought and adopting a suggestion of Fraser, Dieballa employed successfully salol in a case of similar kind, in which the usual remedial agents had been previously employed without avail. The patient was a labourer, 50 years old, who suffered greatly from weakness, and presented a yellowish discoloration of the skin and conjunctivæ, and pallor of the lips and mucous membranes, with a reduction of the red blood corpuscles to 1,120,000 per cubic millimetre, of the white to 2,600, and of the hæmoglobin to 43 per cent. At the age of 31 he had a like attack, from which he recovered in the course of six months, and again at the age of 45. The red blood corpuscles varied greatly in size and shape, and some were nucleated. Of the colourless corpuscles 55 per cent. were polymorphous neutrophile, 21 per cent. lymphocytes, 13 per cent. large mononuclear cells, 8·5 per cent. transitional forms, and 2·5 per cent. eosinophile cells. After arsenic, bone marrow, iron, inhalations of oxygen, and quinine, singly and in combination, had been employed for more than four months without appreciable benefit, salol was given in doses of 15 grains five times a day. Unpleasant symptoms arising, the frequency of administration was reduced to three times a day. The treatment was continued thus for three months, at the end of which time the red corpuscles had increased in number to 4,200,000 per cubic millimetre, the colourless corpuscles to 7,000, and the hæmoglobin to 60 per cent., while a gain in weight of 30 lbs. had been made. Of the colourless corpuscles the polynuclear neutrophile were increased to 68 per cent., and the large mononuclear and transitional forms to 8 per cent., the others undergoing practically no change. The presence of eosinophile cells in about normal proportion was looked upon as indicative of maintained functional activity of the bone marrow in the process of hæmogenesis, and to this extent of favourable prognostic omen.

In cases in which the blood-forming organs are believed to be at fault, bone marrow may serve a useful purpose. The influence which this substance is capable of exerting is still undecided, but in a disease like pernicious anæmia, in which no measure can be expected to act with certainty for good, the patient should be given the advantage of every doubt, and no remedy should be neglected which may even doubtfully render a service. In the way of agents that aid in blood-making the first place must be given to arsenic, given in doses as large as the patient will bear and for a long period of time. Iron

is not capable of the same good, but may find a useful place in the treatment. Inhalations of oxygen have at times proved a valuable therapeutic adjunct.

It goes without saying that the diet should always be the most nutritious possible, special care being observed to maintain digestive integrity and activity, while no general hygienic precaution should be neglected. Moderate and gentle exercise in the open air, within the limits of fatigue, and exposure to sunshine should be judiciously indulged in. Symptomatic indications must be met as they arise. Strychnine in moderate doses will almost always serve a useful purpose.

In attempting to reach a decision as to the efficacy of any plan pursued in the treatment of pernicious anæmia, it is to be borne in mind that periods of transitory improvement, of varying duration, are often a part of the natural course of the disease, so that too much importance must not be attached to the favourable results that may follow the special line of medication employed. Even if such improvement continue for a long time the conclusion must not be too hastily reached that the disease is cured.

14.—SPLENIC ANÆMIA.

By Langford Symes, M.R.C.P. I.

One may define this disease as "a persistent and intense anæmia affecting infants and young children, accompanied by enlarged spleen and usually by rickets." It occurs amongst the wealthy classes just as in poor children. There is a disposition to hemorrhages, and there are profound changes in the blood. There is a condition of leucocytosis, which has sometimes developed so great an increase of white blood-cells as to resemble leucocythæmia, and "borderland," or composite cases, occur which are most puzzling. It has been observed in infants as young as three months, though it will usually be discovered at from nine to fifteen months. Of the antecedents and cause of this disease our knowledge is imperfect.

Selecting six cardinal symptoms or signs of this disease the most striking are :—(1) *Anæmia.*—The *facies* is very suggestive. The face is pale and rather puffy, and there is marked anæmia of the lips and conjunctiva. It may be perfectly bloodless, or have a waxy, pallid, bluish hue. Most commonly there is a decidedly yellow, sallow, splenic tint with the anæmia. The skin generally is sallow ; there is a yellowish, creamy-white appearance and a brilliant yellow, sulphur colour about the cheeks and forehead. This gives the child a very serious look, but the eye is bright and "seeking." The pallor is sometimes

extreme. The complexion is scarcely ever devoid of these characteristics. I have very often observed brilliant yellow patches in spots over the white face. (2) *Enlarged Spleen.*—It can often be seen; I have frequently mapped it out from sight. It is very hard and smooth. The edge is sharp and notched, and it is painless, and you can handle it freely. (3) *Blood Changes.*—An examination shows:—Loss of red cells; loss of hæmoglobin; some increase of white cells, a state of leucocytosis, which varies in amount, but a true leucocythæmia is very rare. The red cells do not form rouleaux as in health. There are also many small globules, granules, and microcytes, which, it has been suggested, may be partially-developed red cells. Some large branching leucocytes are also seen. (4) *Rickets.*—This is very common, as evidenced by sweating, Parrot's nodes, beading of the ribs, especially the 6th and 7th: rickety chest, rickety joints, craniotabes, enlarged belly, or enlargement of ends of the long bones. (5) *Hemorrhages—i.e.*, blood extravasations, epistaxis, petechiæ, hæmatemesis or bleeding from the gums, and a tendency to bruise easily. I have seen large ecchymoses on each knee after slight tapping to bring out the patellar tendon reflexes. Blood may also be voided with the motions. (6) *Œdema*, especially of the feet. Then irregular fever, diarrhœa, lassitude and weakness, mucous catarrhs, pica or depraved appetite, complete the picture. It should also be remembered that the child is not always thin.

In the diagnosis of splenic anæmia many other affections must be recollected. The diseases which most resemble it, and with which it is most likely to be confounded, are:—(1) *Leucocythæmia* (splenic form). This must be chiefly eliminated by a careful blood estimation, when it is recognised by—red cells very little decreased; white cells are enormously and permanently increased from about 1:20 to 1:5 or more (instead of 1:300), especially is there an increase of the coarsely granular polynuclear eosinophiles. (2) *Hodgkins' Disease, or Lymphadenoma, Lymphatic Anæmia.*—Here, the lymphatic glands being greatly enlarged, especially in the neck and axillæ, dyspnœa and the enlarged tonsils will help to distinguish it. While the blood shows red cells greatly decreased; very slight increase of white cells, a slight leucocytosis. Rickets, syphilis, tubercle, lardaceous disease, enteric fever, ague and relapsing fever, also produce enlargement of the spleen; but the association of symptoms above tabulated are generally sufficiently characteristic to distinguish splenic anæmia.

The course of this disease is essentially chronic. In one particular instance improvement was very marked only after nearly ten months' duration and eight months of treatment. Hemorrhages and ecchymoses of the mucous membranes, with blood in

the motions, may be met with during its existence, and I have seen diarrhœa profuse, and sufficient to cause great anxiety. The child may succumb to the prolonged and increasing exhaustion, or some intercurrent affections, as pneumonia or measles. From my own experience I should say diarrhœa is a formidable complication. Of the prognosis in these cases we cannot speak with certainty. The number of those that recover seems to be slightly over those that die. I have seen some distinctly but slowly improve in a month or two, while some recover completely. Dr. Carr gives the following analysis of the 30 cases observed by him :—13 recovered, 10 died, 6 disappeared, 1 remained stationary.

If distinct increase of white blood-cells is discovered on a blood estimation being made, it is not a good sign. Many children with chronic splenic enlargement die with progressing anæmia, wasting and dropsy. It is a very intractable disease, even the syphilitic cases, and we must recollect that the spleen responds very tardily to drugs.

Dr. Donkin believes that the ultimate prognosis is bad. The treatment of this affection must be persevered in for a considerable time. Changes in the drugs and diet administered will frequently have to be made. Perhaps the best thing we can commence with is :—*Arsenic.*—About ℥. 1 or ℥. 1½ of Fowler's solution three times a day. Many physicians give much larger doses of arsenic to young children, but in this disease it is not, I think, advisable. Arsenical neuritis is easily produced in children, and I have frequently observed it cause diarrhœa, which is difficult to check. It is said that if there is inanition, signs of tubercle in the lungs, or glandular swellings, arsenic is especially valuable.

The next preparation to rely upon in the management of these cases is bone marrow. This is a food possessed of therapeutic qualities. It is taken well. The elixir of bone marrow made by Messrs. Allen and Hanbury has given excellent results. Thirty mimins twice a day can be given to a child 15 months old. This, again, may perhaps set up diarrhœa, for it takes very little to produce it in these cases. This bone marrow may be given alternately with arsenic as occasion suggests, and it must be remembered that it does not always act as we desire. If diarrhœa is set up it will require careful and special treatment.

Equally, or perhaps more important than these, is the dietary of the child. Milk diet, if it agrees, with sponge-cake ; beef-tea ; raw meat-juice, about ℥i. daily ; gravy. There are few things so beneficial to young children as gravy, and one of the best ways of administering it is to mix it in the infant's milk. A small quantity, thus given, I have seen produce marked improvement. Moreover, they take it admirably, and it is not

at all disagreeable. Arrowroot may be given in alternate meals. Peptonised milk, with barley water, or peptonised and boiled milk alternately, especially if diarrhœa be present.

Should any unhealthiness of the gums exist, or hemorrhages, or any evidence of scurvy appear, the child should have some orange-juice—say the juice of half an orange daily ; grape-juice may also be given, while the gravy and meat-juice should be persevered in.

The hygienic surroundings of the child must be good, and fresh air and ventilation obtained. If able to go out or travel, sea air should be sought, and Dr. Eustace Smith's advice followed by bringing the child out, well clothed with a flannel binder, in a well-padded carriage, with a hot bottle to its feet.

Some preparations of iron have been given, also quinine and cod-liver oil. Mercury also has benefited some cases, but unless some syphilitic taint be, with reason, suspected, it is perhaps wiser not to mercurialise the child.—*From Dr. Symes' paper in the Dublin Journal of Medical Science, March*, 1897.

15.—HEAT-STROKE.

By N. R. Norton, M.D.,

Late House Physician to the Presbyterian Hospital ; Assistant Resident Physician to the New York Foundling Hospital.

[The following, taken from Dr. Norton's paper, is based on the cases admitted into the Presbyterian Hospital, New York :]

The immediate institution of proper and vigorous treatment in insolation is of more vital importance to the patient than in any other disease. During the six days from August 8 to 13, 1896, inclusive, about 110 persons were brought to the hospital suffering more or less from the excessive heat. About 50 of the cases were of the milder forms, and are not included in the report. Cold water was given, with which they sponged their heads and chests, and they were kept in a cool room, and left the hospital in from fifteen minutes to twelve hours. The cases include only those with a temperature on admission of 104 deg. F., or over, which was evidently rising. Of these, there were 61, with 9 deaths : a mortality of $14\frac{3}{4}$ per cent.

Etiology.—The cumulative action of the heat was pronounced ; it was the third day of excessively high temperature and humidity when the first cases occurred. Then, on six successive days there were two, six, ten, twenty-one, seven, and four respectively. Of the fifty cases, twenty-seven were between three and eight o'clock in the afternoon, four from eight

o'clock to midnight, four from midnight to 6 a.m., and six more before noon. From noon to 3 p.m. nine cases were brought in. Thus there were 40 cases from noon to midnight, and but 10 from midnight to noon. There were but few in women, 46 of the 61 cases being in men. The occupation of most of the patients involved exposure to the sun, though in a fair number, including all the women, this was not so. The average age was thirty-six years, the oldest being seventy and the youngest nineteen years of age. With few exceptions the patients were large-framed, well-muscled, and robust individuals. Those that were the reverse did poorly as a rule. Only one had had a previous attack, and that was on the day before admission. His was a fatal case. The use of alcohol seemed to have a direct and unfavourable influence.

Prodromes.—Definite histories were next to impossible to obtain. Most of the patients had had but slight warning, such as dizziness, a sense of fulness in the head, and decrease or suspension of sweating.

Onset.—In most of the cases (44) the onset was sudden, with immediate loss of consciousness. It varied from thirty minutes to forty hours in the six others.

Symptoms on admission.—Mental condition.—Seven patients, with an average temperature of 104·8 deg. F., varying from 104 deg. to 105·6 deg. F., were conscious. Two, with temperatures of 104 deg. and 105 deg. F., were stupid and quiet. Delirium and semicoma were present in five cases, the temperature ranging from 106 deg. to 109 deg. F., with an average of 108 deg. F. Coma characterised the thirty-six remaining cases, and the temperature averaged 109·1 deg. F., the lowest being 105·6 deg., the highest 115 deg. F. The delirium in some cases was wild, in others muttering.

Pulse.—In 18 cases the pulse was very rapid and weak, even to being imperceptible, while in the others it was of good force, often bounding, but without tension, occasionally slow, but usually accelerated.

Skin.—In all the cases there was a peculiar characteristic pungent odour, and the surface was hot and dry. In those cases with weak and rapid pulse the face was pale, in the others flushed.

Pupils.—Many were pin-point and did not react to light, others being normal in size and reaction.

Respiration varied from normal to stertorous ; 11 patients in very bad condition respired with short gasps.

Muscular system.—There was marked general muscular relaxation in 13 patients whose circulation and respiration were markedly depressed. Convulsions or muscular twitchings were

not present in any case on admission. Involuntary dejections occurred in all the 41 comatose and semiconscious cases, either before admission or in the first bath. Vomiting characterised but two cases.

Treatment and subsequent course of the disease.—The ambulance surgeons were instructed to at least start undressing the comatose patients on their way to the hospital. Immediately after admission they were stripped of clothing, which took about thirty seconds. They were then immediately put into the bath, at least one of the house staff directing the treatment in each case. With the first five cases the netted cot was used, the patient being constantly rubbed and sponged with ice water. They were all in coma, and the sponging was used only because the tubs were not in readiness, the cots having been sufficient for the small number of cases treated in previous years. The average temperature in these cases was 110·3 deg. F., the lowest 105·6 deg. F., the highest 115 deg. F. Thirty-two minutes was the average duration of the bath, varying from fifteen to fifty minutes. The baths were stopped at from 104·5 deg. to 100·6 deg. F., the average temperature of the patients when removed being 101·7 deg. F. Following the bath at an average interval of fifty minutes, ranging from thirty minutes to two hours, the temperatures fell to from 100 deg. to 95 deg. F., the average being 98 deg. F.

The tub bath was used in 36 cases, including those of all the comatose and delirious, and that of one conscious patient. The water was as cold as it could be kept, with ice constantly floating in it, usually at about 40 deg. F. Four attendants continually rubbed briskly all parts of the body, the head being constantly bathed. The average temperature in these cases was 108·9 deg. F., the lowest 105 deg. F., the highest 112·2 deg. F. The baths lasted from six to sixty-five minutes, the average being twenty-six. When the temperature reached from 105 deg. to 99·4 deg. F., an average of 103·2 deg. F., the patients were removed from the bath. In a time averaging forty-eight minutes, and varying from twenty minutes to two hours, the temperature dropped to 97·6 deg. F. as an average, the limits being 93 deg. and 100 deg. F.

Ice sponge baths were also used in five cases of conscious or stupid patients, with moderate temperatures varying from 104 deg. to 105·2 deg. F., and averaging 104·5 deg. F. They were bathed from eight to forty-five minutes, or an average of twenty-three minutes. The temperature at which they were removed was about 102 deg. F., varying from 101 deg. to 103 deg. F., falling to 98·9 deg. F. as an average, but varying from 99·8 deg. to 97 deg. F. about forty-six minutes after their being removed from the bath.

In all cases the temperature was taken every five minutes during the early part of the bath, and when it began to drop, as quickly as the thermometer would register. The temperature rose, even after the bath had been started, in five cases, but never rose over 0·6 deg. F., usually in about five minutes. Only eight patients received stimulation by drugs during the bath, and they were persons in whom the pulse was almost imperceptible. Camphor and ether were used for rapid action, and then strychnine, all subcutaneously.

The stimulating action of the cold water was remarkable. Patients that were apparently taking their last gasps would immediately respire more deeply, and a pulse almost impossible to feel would, in the course of a few minutes, be of good quality, though rapid. Those in coma would, when the temperature began falling, as a rule, rouse up, struggle, and become more or less delirious. Those delirious would resist the bath vigorously, then grow more quiet, and again become restless as the temperature fell more.

On removing the patients from the bath, they were rubbed dry with crash towels and covered with a blanket, and hot-water bottles were placed at their feet. If their condition indicated it, either from pulse, respiration, or any considerable falling of the temperature, they were further stimulated with camphor and ether, strychnine, digitaline, or atropine, hypodermically, and with whisky and hot water by the rectum, or, when possible, by the mouth.

The early regaining of consciousness seemed a particularly good prognostic sign ; in all such cases, with one exception, the patients did remarkably well. Of these there were 26, and they were rational, on an average, in twenty-four minutes after leaving the bath, the shortest interval being five minutes, the longest two hours. With two exceptions in the fatal cases the patients never regained consciousness, and those that were critically ill after the baths did not regain consciousness for hours, and, in some cases, days. After the lowest temperature following the bath had been reached, there was more or less of a reactionary elevation, in some cases needing no treatment, in others nothing but one or more sponge baths at 70 deg. to 75 deg. F. Some of these second elevations of temperature were very alarming, and demanded very prompt and active treatment. The most severe and sudden second rises were usually announced, even before the thermometer indicated it, by fibrillary twitchings, becoming more and more marked, until they closely resembled epileptic or uræmic general convulsions. They were usually preceded and accompanied by a wild delirium, which subsided as the temperature advanced. This rise was extremely rapid, and frequently advanced after beginning the bath. In all

there were seven patients with severe convulsions, of whom six received second ice tub baths, which were started as soon as possible after the beginning of muscular twitchings, so as to anticipate the high temperature which was sure to follow. Thus the highest temperature reached was 106 deg. F., one not going above 103·8 deg. F., the average being 104·9 deg. F. at an average period of two and a half hours from the lowest temperature obtained by the first bath.

Of the six patients, two died, never having become conscious. The four others had not regained consciousness after the first bath, but in a short time after the second were perfectly rational, acting like the twenty-six above mentioned. Three cases needed no subsequent sponge bathing. For the convulsions mentioned, morphine was used, but with apparently no effect.

It was made the routine practice to take all temperatures every half hour until danger of sudden rise had passed. Whenever a temperature reached 102·5 deg. F., or, in some cases, 103 deg. F., the patient was sponged, usually with water at 70 deg. F., but if the temperature had risen rapidly, with ice water. These baths lasted from ten to fifteen minutes, or, in some cases, until the temperature was reduced to 101 deg. F.

Subsequent baths.—Twenty patients recovered with no baths other than the initial one. Two died without the temperature rising. Three of the six with convulsions, above mentioned, had one second tub bath. The twenty-five remaining, of whom two already had had a second ice tub, had sponge baths ; nine had one ; seven had two ; two had three ; three had four ; one each had seven, eight, sixteen, and twenty-two. After the temperature had thus been controlled, the patients, with few exceptions, recovered uneventfully.

Urine, for the first twelve to twenty-four hours, was, in all cases, voided normally, was not decreased in quantity, averaged a specific gravity of 1·020, and almost always contained a trace of albumin, but seldom casts.

Mental condition.—Except in alcoholic cases, a quiet sleep was the rule. The mind was clear, with no headache, but considerable headache when the patients first got up.

Skin.—In all the patients that had had ice baths the entire surface was covered with minute petechiæ. The skin remained dry in many instances, but after administering Dover's powder, with hot lemonade, sweating became normal. Four patients had troublesome furunculosis from direct infection from foul water in which they were bathed, due to involuntary dejections.

Mucous membranes.—During and after the tub baths there was bloody expectoration in about ten cases, apparently due to intense congestion, which must have existed through all mucous

surfaces, as four patients had blood-stained stools, and one had considerable blood with the vomitus.

Time in hospital.—Excluding nine fatal and nine complicated cases, there were 32 in which the patients left the hospital at the end of thirty hours, as an average, varying from eight to seventy-two hours.

The severity of the epidemic, the large number of cases occurring in so short a time, and the crowding consequent to such an emergency, makes the low death-rate of nine in 61 cases, or $14\frac{3}{4}$ per cent., extremely gratifying.

Hydrotherapy and skilled and careful nursing seem to have been the chief factors; the very frequent recording of the temperature enabling the baths to be given at the earliest and, therefore, most valuable time; the use of the ice tub bath, with constant and general friction of the entire surface, thus reducing the temperature in the shortest possible time, and being stimulating rather than depressing; the use of the same bath for all severe secondary elevations of temperature, and for the minor elevations sponge baths of ice water or of water at from 70 deg. to 80 deg. F., depending upon the individual case; and the repetition of these baths whenever the temperature is high enough to make them seem advisable. All other means have seemed entirely inadequate.—*New York Medical Journal, March* 6, 1897.

16.—DIAGNOSIS AND TREATMENT OF LUMBAGO.

By F. H. Edgeworth, M.B., B.A. Cantab., B.Sc.Lond.,
Assistant-Physician to the Bristol Royal Infirmary.

[The following is taken from Dr. Edgeworth's paper. A rheumatic arthritis affecting the articulations of the spine is not included here among the causes of lumbago:]

Three classes of cases may be distinguished—those of rheumatic myalgia, rheumatic neuritis, and renal pain associated with hyperacidity of the urine—and if the differential diagnosis be made, it is found that treatment is thereby much simplified and restoration to health more readily brought about. The patients of the third class complain of a dull aching pain in the lumbar region on both sides. The pain, which is constant and not made worse by movement, is not confined to the lumbar region; it extends forwards round the trunk into the groins, and occasionally into the testes. The patient generally complains of scalding during micturition, and the urine, which is quite clear on first being passed, is very acid in reaction, and

on cooling deposits abundant brick-red urates. The muscles are not tender on palpation or percussion. The pain is evidently associated with and probably dependent on a hyperacidity of the urine. Treatment is simple and most successful, consisting in the administration of large doses of some indirect antacid, such as potassium citrate.

Lumbago due to rheumatic myalgia is characterised by pain in the lumbar region only, generally on both sides, though occasionally on one side only. It very rarely extends to the muscles of the anterior abdominal wall. When the patient is at rest or lying down there is no pain, which occurs only during movement. An easy way of satisfying oneself as to this is to ask the patient to stoop down and touch his toes—the action is performed carefully and stiffly, with evident discomfort, often much greater whilst resuming the upright position than in stooping. The muscles are not in the least tender on palpation, and there is no hyperæsthesia of the skin either over the affected muscles or on the front wall of the abdomen. The urine is normal, and there is no scalding during micturition.

Lumbago from rheumatic neuritis resembles rheumatic myalgia in many of its features, but differs in three particulars. The pain, although rendered worse by movement, persists in a less degree during rest. Further, there is some tenderness on palpation, particularly over the spots where the nerves run through fasciæ. And lastly, pain is often felt along the course of the sciatic nerve or nerves as well as in the lumbar region. If a case be seen early there is rarely any evidence of impairment in the conductivity of the nerves.

The treatment of lumbago due to rheumatic myalgia or neuritis consists in the administration of salicylates until toxic effects are produced, and in the use of counter-irritation, the best application for which is capsicum, which was recommended many years ago, but has been but little used. The ordinary B.P. tincture is diluted with water in the proportion of 1 to 5, and applied on lint, covered by oiled silk or other protective to prevent evaporation. The effects of this are extraordinary and quite inexplicable—a patient, who a quarter of an hour previously could not make the least movement by reason of the pain, is able to move freely and painlessly. This result is, it is true, somewhat transitory; it wears off in an hour or so, but can be reinduced by a fresh application. One usually directs this to be done for half-an-hour four or five times a day.

I have found that the salicylates act more speedily in cases of rheumatic neuritis than of rheumatic myalgia—in the former the pain usually ceases as soon as salicylism is produced, whilst this has to be kept up for some little time in cases of myalgia before its cessation. These cases of rheumatic neuritis and

myalgia have some etiological relationships with ordinary rheumatic arthritis.

The relationship then of these "minor" rheumatic affections is perhaps a good deal nearer that of ordinary rheumatism than is generally supposed, and affords an explanation of the good effects produced by the administration of salicylates.—*Bristol Medico-Chirurgical Journal, December*, 1896.

17.—SERUM-THERAPY.

By Professor Whitla, of Belfast.

[The following is taken from Dr. Whitla's address. It is included here as it illustrates the principles of serum-therapy :]

Acquired immunity has been for ages recognised, since it was noticed that an attack of some infectious diseases protected an individual for long periods or for life from subsequent attacks of the same disorder. With the discovery that the blood of animals artificially rendered immune contained certain chemical substances, came the possibility of a new system of treatment. An important advance in our knowledge was made when Salmon demonstrated that an animal could be rendered immune by the injection of gradually increasing doses of the chemical substance manufactured by the bacilli without the injection of any living microbes.

Chemical vaccination, in contradistinction to vital or protein vaccination, was thus demonstrated to be practical, and gradually it was established that there is no essential difference between the process of immunisation or protection by means of injections of the chemical poison or by small quantities of the living bacilli. It was soon proved that the animal so protected by either or by both methods was also protected against lethal doses of the pure chemical substance, as well as against lethal doses of cultures of the living bacilli, or, as put by Kanthack, "Immunity, therefore, implies resistance against the bacteria and their products."

By these results, and the knowledge gained during their progress, the way was gradually opened up for the brilliant discovery of Behring. He had found that by injecting gradually increasing doses of the living cultures, or of the chemical poison or toxin of diphtheria, into animals, they were easily rendered insusceptible to the disease—in other words, Behring proved by direct experiment that Pasteurism applied to diphtheria as well as to anthrax and other diseases; but he fortunately went two steps further and discovered that the blood serum of the protected animal contained chemical

substances developed (during the immunisation) which had the power of protecting or immunising another animal if injected into its tissues. This result was found to be true, not only in the case of diphtheria, but experiment proved that similar results were obtained with other infective microbes, so that all bacteriologists accept without reservation the law now known as Behring's law—"That if an animal has been artificially protected against a particular infective agent, its blood or serum acquires the power, when injected in sufficient quantity into another animal, of directly transmitting an immunity from that agent." Behring's final step led to his discovery that the serum or antitoxin was not only preventive but curative, and that its administration to an animal or to man already infected with the original microbe possessed distinct antidotal powers.

We shall now pass on to the consideration of a few of the experimental proofs of the value of the antitoxic serum. A culture is made on broth, gelatine, or agar of the pure bacillus, and filtered so as to contain nothing but the toxin; the potency of this will depend upon the nature of the nutritive medium and the length of time it has been incubated. Roux, at the Pasteur Institute, prepared in this way a pure toxin, of which ·1 c.cm. always killed a 300 to 400 gramme guinea-pig in about thirty-six hours. After the injection of this dose (=about $1\frac{1}{2}$ minims) a tumour appears in about twenty hours at the site of the injection, and in twelve or sixteen hours more the animal dies, and its organs afford proof of the identity of the poison with that of human diphtheria. If a much smaller dose be injected into another healthy guinea-pig, or if the same dose of the toxin, attenuated by heat or chemicals, be injected, a trifling tumour appears, and in a few days the animal is found quite healthy; larger doses can then be administered, and soon it is found that it bears many lethal doses with impunity, and eventually it is proved to be protected against enormous doses. If it be now bled the serum of its blood contains the antitoxin of a strength proportionate to the amount and frequency of the toxin administered.

Behring's method of determining the antitoxic value of serums was to mix them in varying quantities with ten lethal doses of toxin, and then to administer the mixture to guinea-pigs of 300 grammes weight. When he found a serum of which 0·1 c.cm. mixed with ten lethal doses could be injected into a guinea-pig without the slightest harm he labelled this serum as possessing one immunising unit. He was able to protect animals to such a degree against diphtheria that $\frac{1}{150000}$ part of 1 c.cm. (= nearly $\frac{1}{1000}$ part of a drop) of their serum mixed with a fatal dose of diphtheritic toxin, when injected into

a guinea-pig, produced no effects whatever. The same dose without the serum always killed the control animal.

The experimental evidence of the value of the antitoxic serum when injected as an antidote to the toxin of diphtheria must in the case of animals be regarded as conclusive and the problem as proven.

We must next seriously consider in how far are these experimental results comparable to the phenomena which are to be met with in dealing with diphtheria in the human subject. In one respect they are widely different, and upon this serious difference depends the issue of serum-therapy. I have mentioned that the bacteriologist mixes an enormous dose of diphtheritic toxin with an almost invisible amount of the harmless serum in his test tube and injects the mixture into a healthy rabbit or guinea-pig and no results follow. If the problem of treating diphtheria in the human subject could be reduced to these simple lines we might safely affirm that no person need ever die of the disease. In the first place it is obvious that the physician has no means of determining the amount of the toxin which has already found its way into the patient's blood, and if many times the lethal dose has been absorbed, experimental research in animals has proved that the case is hopeless. There are, therefore, limits to serum-therapy, and a consideration of these limits are of vital importance before we can hope to use the antidote with success.

The diphtheria bacillus grows upon the surface of the mucous membrane and its poison is gradually absorbed, the patient being in the position of hourly receiving numerous small doses of the toxin before his danger is even suspected—a condition differing widely from that which maintains in the test tube experiments previously mentioned.

Before applying the serum to the treatment of the disease in man, Behring first produced artificially in animals a condition closely resembling if not identical with that which exists in human diphtheria by injecting numerous small doses of the toxin without any previous admixture of the serum *in vitro*. A few of the results may be mentioned. An animal was injected with the minimum lethal dose of the toxin, and at the same moment an injection of the serum was given in some other part of its body. It was found that the dose of the serum necessary to save the animal under these conditions was more than 100 times the quantity which was necessary to save it had the serum and the toxin been previously mixed together before injection.

The next series of experiments closely imitated the conditions present in human diphtheria. The minimum lethal dose was injected into an animal, and thirty minutes allowed to elapse

before the serum was administered ; the dose of the latter necessary to save the animal was found to be 200 times greater than that used in the test tube experiment. Fortunately it has been proved that if double the lethal dose be given to an animal and serum be injected thirty minutes later it does not require such a relatively large dose to save the animal—viz., the amount necessary will fall far short of 400 times the test tube amount, but Professor Fraser insists upon the importance of noting that if the dose of toxin considerably exceeds the minimum lethal dose, possibly for most toxins, when it is as large as three times the minimum lethal, there are probably no existing antitoxins that are capable of preventing death in any conditions encountered in practice. I mention these later experiments, for in them the key-note to treatment is to be found. It is obvious that the whole success of serum-therapy will turn upon this "time" difficulty, and the facts demonstrated in the laboratory receive striking corroboration by a study of the published results of the success of the treatment in the human subject.

When we come to examine the results of the treatment, as published within the past two years from all parts of the world, the evidence of the success of the antitoxic serum appears to be overwhelming. Reliable statistics of more than 20,000 cases have now been published, and the flow of reports is probably somewhat checked, as the case is now regarded almost universally as proven. Some difference of opinion may still exist regarding the effect of the serum upon certain symptoms and sequelæ. The majority of observers agree that in the vast bulk of cases treated by the serum a general improvement in all the symptoms sets in rapidly.

The false membrane ceases, as a rule, to extend, and generally speedy disintegration of it begins. This is evident also in those cases where laryngeal symptoms have become obvious and are deepening, and the evidence is overwhelming that the serum often prevents the necessity of tracheotomy.

A few (two or three) sudden deaths have been reported as occurring soon after the injection of the antitoxin. The test case is the sad one where the antitoxin was injected as a preventive into the healthy child of Professor Langerhans. The event was so clearly the result of the injection that too much attention could not be called to it. Up to this accident the serum was regarded as harmless. In a recent number of the *Therapeutic Gazette* a statement appears in the leading article about this case :—"It has been explained by the fact that the child had just completed an unusually heavy meal, and that in the attempt to vomit during the faintness following the injection, he drew into his air-passages some of the contents of his

stomach, with resultant asphyxiation." In the 6,000 American cases death was supposed to be caused or hastened by the injections in three cases, but an analysis of the cases does not appear to warrant the suspicion. I cannot find a single instance where any serious results have followed the injection of antitoxic serum in animals.

Joint pains, and the characteristic erythematous eruption which so often follows, soon pass off and may be disregarded, though the rash be followed by some pyrexia.

All the serums as yet produced in the liquid form deteriorate, and this so rapidly and to such an extent that in many cases a worthless liquid is injected. Serum should be kept in the dark, and in a very cool place, in sealed bottles. The dried serum, if found perfectly reliable, may dispose of this serious difficulty as regards fresh supply, but at present its relative value to the liquid has yet to be proven. It is interesting to note that the cutaneous inconveniences are seldom found to follow after its use, and by making a strong solution of it, the bulk of the injection is much lessened, and the operation appears to the patient to be less formidable, as a much smaller syringe may be employed. Upon the other hand, some authorities affirm that the serum cannot be reduced to the dry state without injury to its virtues, and, as far as I can learn, the Continental authorities use the liquid form.

It is needless to state that the strictest antiseptic precautions should be taken, and the syringe used should be one capable of sterilisation by boiling. A weak sublimate, or 1 in 20 carbolic lotion, must be freely applied after soap and water cleansing; and the subcutaneous tissue of the flank is the most convenient site for injecting.

In the Asylums Board Reports the rash appeared in 45·9 per cent. of the cases; joint pains in 4·7; pyrexia, with or without rash, in 29·6; and abscesses at the site of injection in 2·3 per cent.

The dosage is of vital importance, and the numbers of different serums in the market of different strengths have led to some confusion. All serums should be sent out in doses containing 1,000 or 2,000 immunising units, regardless of the actual bulk of the serum, as in the case of the remedy prepared by Dr. Sims Woodhead.

The American Committee recommends for all severe or larnygeal cases that a dose of from 1,500 to 2,000 immunising units should be given to a child two years old in the first injection, this to be repeated after eighteen to twenty-four hours. The Asylums Board reporters recommend only 1,000 units every twelve hours. In the selection of a serum the rule should maintain that the stronger it is the better.

In the case of tetanus the experimental evidence is astounding. An animal may receive many thousands of times the lethal dose of the tetanus toxin and be saved with certainty by injecting the serum immediately afterwards; but when we come to apply the serum to the tetanus occurring in man the case is widely different. The microbe has many days' start, and the patient's blood is charged for a long time with the toxins which the microbes have been steadily manufacturing during the long period of unsuspected incubation. To meet such a condition a serum of 1 to 1,000,000 immunising power must be employed, and though it is claimed that the mortality has been reduced by a half through the use of the serum, the cases are far too few to establish the serum-therapy of tetanus. More promising results may be expected from serum-therapy in snake-bites.—*Dublin Journal of Medical Science, January*, 1897.

18.—ANTIPNEUMOCOCCIC SERUM.

By J. W. Washbourn, M.D., F.R.C.P.,

Physician to the London Fever Hospital, Assistant Physician to Guy's Hospital.

[The following is introduced here as it is desirable to notice every extension of the serum treatment made by a reliable observer. Nearly all the experimental evidence in regard to the immunisation of the ponies and the estimation of the strength of the serum has had to be omitted, as well as the details of two cases treated with the serum :]

To obtain a sufficient quantity of serum it is necessary to immunise large animals, such as the horse ; and, to estimate its strength, it is necessary to use more reliable methods of cultivating the pneumococcus than have hitherto been employed.

Nature of serum.—From experiments made it is seen that the serum possesses the power of protecting animals against infection when injected either at the same time or subsequent to inoculation. It is impossible to say whether it possesses antitoxic powers, because hitherto no satisfactory toxin has been obtained from cultivations of the pneumococcus.

Cases of pneumonia treated with serum.—The following are brief notes of two cases of pneumonia treated with the serum. One case was under the care of Dr. Pye-Smith, to whom I am indebted for permission to publish the notes. Other cases have been treated, and will shortly be published by the physicians in charge. From such a limited material it would be rash to draw conclusions, although in Case 2 the treatment appeared to have a distinctly beneficial effect. I am induced to publish the results

of my investigations at this early period, as I hope that the British Institute of Preventive Medicine will shortly have a sufficient quantity of the serum to supply to those who wish to use it in the treatment of pneumonia.

Case 1.—Pneumonia of left lower lobe in a man at 29 : Treatment with serum : Recovery. The injection of the serum was followed on both occasions by a fall of temperature, and on the day after the second injection the crisis occurred. Inasmuch as this was on the ninth day of the disease, it is difficult to say whether the result was due to the treatment or not. The attack was a fairly severe one, but the pulse was good before the serum treatment was adopted.

Case 2.—Double pneumonia in a man at 25 : Treatment with serum : Recovery. The patient, though young, was a bad subject for pneumonia on account of his intemperate habits. The attack was a severe one, and both lungs were affected. There was a good deal of delirium ; the pulse was 140, and the heart showed signs of dilatation on the second day of the disease. The serum appears to have exerted a beneficial effect upon the disease. On the day after the first injection the pulse-rate had fallen from 132 to 112. The process in the left lower lobe never advanced after the treatment was begun. It will be observed that the serum was injected at an early stage, namely, on the third day of the disease. In both cases an urticarial rash was observed during convalescence similar to the rashes occurring after injection with antitoxic and antistreptococci sera.

Administration of serum.—The serum should be injected into the subcutaneous tissue, and strict aseptic precautions should be taken. The skin should be well washed with an antiseptic, and the syringe should be boiled immediately before use. As to the dose, 20 c.cm (660 units) should be injected, and it would probably be well to inject more frequently than in the cases above recorded. I would suggest that the injection be made twice a day until the patient is convalescent. It is important to commence the treatment as early in the disease as possible.—*British Medical Journal, February* 27, 1897.

19.—THE THERAPY OF THE NITRITES.

By John B. McGee, M.D.,

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The introduction of the nitrites as remedies is due to Lauder Brunton, who first used them in angina pectoris, nearly thirty years ago ; and from that period to the present they have been

quite extensively employed, and no other agents have been found more efficient in the prompt relief of this distressing disease. The official salts at present are those of amyl and sodium. As is well known, the influence of the nitrites is exerted almost exclusively on the circulatory system, the vessels dilating and the tension becoming less under their use. Its inhalation is useful when a prompt cardiac stimulus is required, and in hysterical convulsions is one of the most rapid methods of relief we possess, while even in epilepsy its use will frequently avert an attack when inhaled at its inception.

It is an interesting fact that nitroglycerine, trinitrine, or glonoine, as it is variously termed, although a *nitrate* of glyceryl, and so differing chemically from the nitrites, has a therapeutic action essentially the same. This is evidently due to the fact that the nitrate is reduced to a nitrite, and so exerts an identical influence. When taken internally its absorption is so rapid and its action so prompt that its hypodermatic use is rarely required, except when the patient is unable to swallow or the stomach to absorb it; and as very few deaths have been known to follow its use, it appears to be a remedy which, considering its potency, is quite safe to employ.

The headache it produces is said to be longer in duration than that following the use of the nitrites; but that due to nitroglycerine is both immediate and remote as far as the apparent cause is concerned. The headache felt shortly after taking the drug probably depends on the changes produced in the cerebral circulation; while that occasionally persisting for hours after this effect has evidently ceased is ascribed not to the nitrite alone, but also to the action of the organic radical glyceryl with which it was combined. Being very rapidly absorbed and eliminated, the influence of nitroglycerine is rather evanescent, most authorities placing its limit at about two hours, which indicates its frequent administration if we desire to maintain a decided action. An examination of its effects reduces them to a single positive influence, that of a vaso-dilator, and the evident inference is that its field of value is practically limited to that class of cases in which contraction of the vessels exists and high tension follows. When these conditions are present we can confidently predict favourable results from its use. Raynaud's disease presents an apparent exception. Ordinarily, however, its utility appears to be in a direct ratio with its dilating power, and whether the contraction of calibre be the result of spasm from excessive excitability of the vascular walls, or due to distinct pathologic changes, as in arterio-sclerosis, it readily responds to this remedy.

Small doses stimulate the respiratory centre, and its use rapidly relieves spasmodic asthma, doubtless, as stated by

Fraser, by relaxing the muscular tissue of the bronchi. In pneumonia, when respiration is shallow and cyanosis present, it not only directly aids the right heart in its work, but relieves the venous stasis present by favouring the flow of blood into the arterioles. This effect is especially evident in children, in whom the distressing symptoms are often promptly relieved by its use.

In the high tension of renal cirrhosis, its action aids diuresis and lessens the heart resistance imposed by the arterial changes existing in this disease; and while its diuretic power is not always very decided, the relief to the serious symptoms is frequently immediate, though really permanent. In this disease, as well as in asthma and dyspnœa, there appears to be a special tolerance of this drug.

At present, the most popular use of nitroglycerine is probably as a cardiac stimulant, as the involuntary muscles generally, and cardiac muscle especially, seem extremely susceptible to its action. When given frequently, however, a tolerance is established requiring increase of dose to insure continuance of effect, and it also appears that the danger from its use does not increase relatively with the dose, if the increase be gradual. While considered a cardiac stimulant, it is evidently such only in small doses; large ones are distinctly depressing, and as the line between stimulation and depression is here easily crossed, the frequent use of small doses gradually increased, if required, will probably yield the best therapeutic results.

In dyspnœa dependent on a cardiac cause, it appears to strengthen the pulse as well as lower its tension, and its greatest value here lies in mitral disease, in which dyspnœa most frequently occurs; but even when associated with aortic lesions, the relief it affords, while perhaps but transient, may greatly aid a weakened heart in regaining its power. In fact, as a routine remedy for dyspnœa from any cause, Leech states that no other agent excels it, or its allies the nitrites. In cardiac failure it has been quite commonly employed, and with almost universal benefit, but this apparent condition may arise from causes essentially dissimiliar; in syncope, where the cerebral vessels lack blood, relief will evidently follow its use, but in true shock or collapse, where the real condition is one of vaso-motor paralysis, its value would appear doubtful, and its use perhaps prove positively harmful. Atropine or strychnine would here seem preferable, and of these the action of atropine is more prompt, while that of strychnine is more sustained. In the vascular changes incident to the so-called "senile heart," and the increased peripheral resistance which these changes imply, its action, while palliative rather than permanent, efficiently aids other remedies. It is best adapted for continuous use

in angina, though the amyl nitrite is perhaps preferable for immediate effect.

An objection to the use of digitalis in some forms of cardiac and renal disease is its contractile action on the arterioles, so increasing the labour of the heart ; its combination with nitroglycerine, however, neutralises this effect, aids its cardiac action, and increases its diuretic power. Although this remedy exerts so decided an influence on the muscular fibre, its effect on the nervous tissue is relatively very slight ; hence the benefit which so frequently follows its use in painful affections, as neuralgias, migraine and sciatica, as well as the relief to the pain associated with local vascular changes of a sclerotic character, is presumably due—not to any direct anodyne power possessed by the drug—but rather to the circulatory changes it induces in the parts involved. When used in locomotor ataxia to ease the pain and render the crisis less frequent, a similar action may explain the benefit produced, as well as in sea-sickness, where its value is doubtless due to its vaso-motor influence.

The centesimal alcoholic solution ordinarily prescribed should not be combined with alkalies, as they may decompose it and render its action uncertain.

Recent observations indicate that the nitrates of other organic radicals possess therapeutic properties identical with those of the glyceryl salt, and the nitrates of mannitol and erythrol have thus far been most employed. As compared with nitroglycerine, the reduction of tension under their influence is less decided, more slowly produced, and persists for a longer time, the fact that they are very slowly decomposed evidently explaining this fact. At present they appear to possess no advantage over nitroglycerine, which will doubtless continue to be our main remedy when we desire a vaso-dilator on which we can rely.—*Taken from Dr. McGee's paper in the Cleveland Medical Gazette, November*, 1896.

20.—ARSENIC IN CHILDREN'S DISEASES.

By Dr. Comby.

Though arsenic is an extremely dangerous poison, which must be used with caution, yet children tolerate it better than adults, and when the remedy is clearly indicated we should use it boldly. In therapeutic doses it facilitates respiration, improves the circulation, and increases the urinary, salivary, biliary, and cutaneous secretions. It is eliminated chiefly by the urine, and easily diffuses through the whole organism, especially showing a preference for the liver.

Rarely prescribed before the age of two or three years, we may, however, have recourse to it even in a nursling who has asthma, pulmonary tuberculosis, leukæmia, or pseudo-leukæmia, or chronic malarial affections, hereditary or acquired. In older children the indications for arsenic become more numerous. In obstinate malarial fevers with marked anæmia, enlarged spleen, cachexia, &c., Boudin employed large doses with great success. When quinine fails we may use the official preparations or arsenical waters (Bourboule). In tuberculosis arsenic stimulates the appetite, favouring increase of weight, and assisting respiration. Pernicious anæmia, leucocythæmia, and pseudo-leucocythæmia—diseases showing profound alterations of the blood—must be treated with arsenic. All the anæmias—chlorosis, lymphatic anæmia, dyspeptic anæmia, and the anæmia of growth do well with a moderate arsenic treatment. Scrofula and scrofulous conditions, adenitis, chronic scrofulous eczema, some arthritic manifestations, asthma, and progressive chronic rheumatism should be treated with arsenic. All the malignant tumours of childhood (cancers and sarcomas) are favourably influenced by this drug. In diseases of the nervous system, epilepsy, hysteria, and chorea, arsenic has been advised; we should not hesitate to push the drug to the limits of tolerance. Arsenic acts well in asthma, pulmonary tuberculosis, chronic bronchitis with or without emphysema, in creeping broncho-pneumonia, and in the lung affections following whooping-cough and measles. Acute affections of the skin, erythemas, acute eczemas, urticaria and prurigo, do not do well under arsenic. But on the other hand, in chronic scrofulous eczemas, lichen, psoriasis, furunculosis, acne, &c., arsenic is perfectly suitable.

Contra-indications.—Arsenic should not be given in cases with nephritis, albuminuria, gastro-intestinal dyspepsia (with diarrhœa, vomiting, &c.), or in the acute infectious diseases.

The drug accumulating in certain viscera, the administration should be suspended for eight to ten days after fifteen days' use. Arsenic being very irritating to mucous membranes, it should be given well diluted. The following arsenical preparations may be used for children :—

Fowler's solution. This may be given in progressive doses—5, 10, 15, to 20 drops per day, well diluted; or it may be given subcutaneously.

Pearson's liquid is not so strong as Fowler's. It contains arseniate of soda. Bourboule water may be considered as very dilute Pearson's liquid.

Boudin's liquid is a very dilute solution of arsenious acid (1 in 1,000). This solution may be prescribed in 10 grm. doses in chorea. Boudin gave it in large doses to persons suffering from malarial conditions. In severe chorea, we may prescribe, for

a child between seven and fifteen years, the first day 10 grms. of Boudin's liquid in 100 and 120 grms. of syrup; 15 grms. may be given the second day, 20 grms. the third, then 25, 30, 35, and 40 grms., until the choreic movements cease. Then the doses are gradually decreased again, so that at the end of ten to fifteen days the child is saturated with arsenious acid and cured of his chorea.

Arsenical granules are well taken by children. We may use the granules of Dioscorides, which contain one milligram of arsenious acid in each granule; three, four, or five per day may be given in cases of dyspnœa, persistent bronchitis, asthma, &c. The arseniate of iron, in granules containing 1 milligram, may be prescribed in higher doses—10 to 15 granules per day.

Arsenic is a drug very well borne by children, but in too large doses, too long continued, it causes anorexia, grave disturbances of digestion, vomiting, diarrhœa, cutaneous eruptions, pallor, and anæmia. But these evidences of chronic intoxication are only met with rarely, in cases in which we have neglected to suspend the administration of the drug in order to avoid accumulation. Acute poisoning manifests itself by sudden onset of epigastric pains, vomiting, diarrhœa, &c. In such a case we must bring on emesis, wash out the stomach, and prescribe the hydrated sesquioxide of iron in large quantities of hot water.—*Bull. Gén. de Thérapeutique, December* 15, 1896. Dr. Coutts' Abstract in the *Medical Chronicle, February*, 1897.

21.—THE THERAPEUTICAL USES OF ACONITE AND ACONITINE.

By William Murrell, M.D., F.R.C.P.,
Physician and Lecturer on Materia Medica and Therapeutics at the Westminster Hospital, &c.

[The following is taken from Dr. Murrell's paper:]

By far the best preparation is the tincture, and the tincture of aconite of the United States Pharmacopœia is thoroughly reliable. It is made from the root, contains 35 per cent. of the active drug, and is about three times the strength of the English preparation of the same name. Aconite has a well-marked physiological action, and if given in anything at all approaching a large dose exerts its power in a toxic or even lethal form. When a dangerously large dose of tincture of aconite is taken it induces tingling and numbness of the lips and tongue, and other parts with which it comes in contact. The uvula feels as if it were swollen, and deglutition is

performed frequently ; gradually as the dose is absorbed the tingling spreads all over the body and is accompanied by signs of muscular weakness. The face assumes an anxious expression, the pupils are dilated, the eyes protrude, and the skin is covered with a cold, clammy sweat. The breathing is laboured and the heart is weak. Sometimes death occurs quite suddenly, especially after some slight exertion, such as sitting up in bed. The lethal dose of the tincture would be anything over 20 minims of the United States Pharmacopœia tincture.

Aconite is a small dose remedy and not a large one, but in small doses it is a remedial agent of wonderful efficacy. It has not a wide range of action, but what it does it does well. It is indicated in the initial stage of all febrile complaints, and the dose should never exceed one-third of a minim of the tincture. It is best given alone in water, and as it is practically tasteless no flavouring agent is required. The prescription I use is the following :—℞ Tincture of aconite, 10 minims ; water, q. s. ad., 4 ounces. M. A teaspoonful to be taken every ten minutes for the first hour and subsequently hourly for six hours. This is the dose for an adult, but for children I use still smaller quantities ; thus for a child four years old I should put only 2 minims in the mixture, and for an infant a year old 1 minim or even less.

Aconite acts quickly, and to do good it must be given as early in the disease as possible. Tablets are made containing one minim of the tincture, and as these are portable and are conveniently carried in the pocket or in a small medicine case, they may be used for the preparation of the mixture. The great indication for the use of the drug is fever as indicated by elevation of temperature. I will give an illustration of the class of cases in which it is useful and of the mode in which it should be employed. A young man of delicate constitution gets wet through, and a few hours later complains of sore throat, difficulty in swallowing, and a feeling of stiffness about the neck. The temperature when taken under the tongue is found to be 103° F., the pulse is 120, the skin is hot and dry, and the tongue is covered with fur. On examining the throat the tonsils are found to be red, enlarged and tender to the touch. The patient is evidently in for an attack of quinsy, and if not promptly treated may be laid up and incapacitated for work for a week or ten days. This is where aconite comes in. The patient is put to bed and covered up with bed clothes. The aconite mixture is prepared and a teaspoonful is given every ten minutes for an hour. Almost immediately the skin becomes moister, the temperature falls a couple of degrees, the pulse is less frequent, and deglutition is performed with less difficulty. After the first hour it will not be necessary to give

the medicine so frequently, and a dose every hour will suffice. The patient will probably fall into a sound sleep, the perspiration continues, and the next morning he wakes up entirely cured.

Aconite given according to this method answers almost equally well in all forms of localised inflammation, whether due to an ordinary cold or to some graver form of disease, such as pneumonia, pleurisy, or peritonitis. Even should the elevation of temperature be due to the onset of one of the acute specific diseases, it will help to bring out the rash and will mitigate the severity of the subsequent symptoms.

Aconite is useful as an external application in the treatment of myalgia, neuralgia, rheumatism, and other painful affections. A combination I often employ is the following :—℞ Tincture of aconite, 1 drachm ; essential oil of mustard, 1 drachm ; glycerine, 1 ounce ; rectified spirits, q. s. ad., 6 ounces. About two teaspoonfuls should be rubbed into the affected part night and morning.

The following liniment is still more efficacious :—℞ Tincture of aconite, 1 drachm ; camphor, 2 drachms ; chloroform, 2 drachms ; oil of cajeput, 2 drachms ; tincture of capsicum, 2 drachms ; rectified spirits, q. s. ad., 6 ounces. It may, if thought desirable, be scented with oil of origanum.

Aconitine, the active principle of aconite, is a most powerful agent, and is one of the best remedies for neuralgia ; either for internal administration or as an external application. Practically, however, a difficulty arises from the fact that the term "aconitine" has no precisely defined meaning. We are dealing not with a simple alkaloidal body, but with a mixture of alkaloids, varying not only in strength but in action. There are at least eight different "makes" of aconitine in the market, and these vary enormously in strength. For example, the English aconitine is at least seventeen times as active as the German, whilst the French is intermediate in power. The best aconitine is the crystallised form made in the United States, and the ordinary dose of which is one two-hundred-and-fortieth of a grain. This is, undoubtedly, most active, and a pill of this strength given three times a day will cure the most inveterate case of neuralgia. The difficulty is to obtain an alkaloid of constant strength and of uniform purity.

An aconitine ointment containing eight grains to the ounce of benzoated lard forms a most powerful local application. It will relieve neuralgic pains almost instantly, but great care must be taken in applying it. It is not adapted for a large surface, but must be rubbed into the tender spot which indicates the exit of the nerve. In the case of neuralgia of the face this is not difficult to find. The quantity employed should not exceed the size of a pea, or at the outside of a small bean, and

it should be rubbed in carefully with the tip of the finger. When there is any abrasion of the skin, or when the skin is excoriated from eczema, it would not be safe to employ it. And again, care must be taken not to use it too near the margin of the mouth or too close to the conjunctiva. It is a valuable application, and may be used with safety under these conditions, but always with caution.

To sum up, in aconite and its alkaloid aconitine, we have two most valuable therapeutical agents, but it is essential to know how to use them. As mistakes will happen even in the most carefully regulated practices, it may be as well to mention that the antidotes for an overdose of aconite or of aconitine are :—(1) Atropine in doses of one-fiftieth of a grain either by mouth or hypodermically ; (2) tincture of digitalis in twenty minim doses every hour for four hours ; and (3) stimulants freely, interpreting the term "freely" in the most liberal sense.—*The Medical Brief (U.S.), March*, 1897.

22.—THE PHONENDOSCOPE.

By Morris Manges, A.M., M.D., Assistant Visiting Physician to Mount Sinai Hospital, New York.

[The following is taken from Dr. Manges' paper in the *New York Medical Journal*, January 9, 1897. The description of the instrument is omitted. The opinions in regard to the value of the phonendoscope differ somewhat widely. From a considerable personal experience of it we think it has been over-estimated, but it is certainly a very portable instrument.—E.F.T.]

Bianchi divides the uses of the instrument into two great groups—the determinations of the sounds heard normally or pathologically in the body (auscultation) and those produced artificially (auscultatory percussion). Among the former are the respiratory and cardiac sounds, the fœtal and uterine sounds, gastric and intestinal peristalsis, crepitation in joints and broken bones, &c. Such is the delicacy of the instrument that the vibrations in the vascular walls produced by the circulating blood and those due to the contraction of voluntary muscles may readily be perceived.

For auscultatory percussion the outer plate and staff are attached and the tip of the staff placed upon the body over the organ to be examined, preferably on some point which is near the surface and is uncovered by any other viscus. Vibrations are produced by gently stroking the skin in the neighbourhood of the staff with the tip of the right index finger. Short, light

strokes are made, usually transversely to the direction in which we proceed ; parallel strokes I have found less useful. Over solid viscera or consolidated areas the stroking must be more vigorous than over hollow or air-containing organs.

Having ascertained the exact character of the tone produced by stroking in the immediate vicinity of the staff, we may proceed to stroke away from it until we observe that the pitch or quality of the note has changed, or, as preferred by Bianchi, we may begin at some little distance away from the staff and stroke centrifugally until we observe the same note as originally heard in the immediate vicinity of the staff. The point at which the characteristic change in note is heard is marked with a dermographic pencil. This, being repeated in the various directions from the tip of the staff, gives us a series of points which, being connected, outline the underlying organ. Either method is good, and may be varied to suit the organ under examination. However, not a little skill and practice are required to determine the exact place at which the note changes. This difficulty varies with different organs. Solid viscera or consolidated areas cause the least trouble ; but, if we must pass over the ribs, as in stroking over the chest walls, or if air-containing viscera are in contact, as in the abdomen, uncertainty will frequently arise, which can only be lessened after one has had considerable experience with the instrument.

In determining the size and situation of the various organs, &c., by this form of auscultatory percussion, the tip of the staff must be placed at definite spots, which Bianchi has determined and mapped out. It will be noted that several points are given for many viscera ; the tip of the staff must be successively applied to each, and the boundary points obtained by the changes in the stroking note must be determined at each, for to get the best results we must not make the areas too large. The force of the stroking varies at different places.

The method of examination is much simpler than it would seem from the detailed description, and the points are remembered more easily than it would appear at first glance. It will be observed that but few points are over bones, the soft parts (intercostal spaces, &c.) being preferred, because bone vibrates so readily that its vibrations will interfere with those of the organ under examination. It is also essential to try to avoid crossing from bony to soft parts wherever possible. It is better to establish a new spot from which to begin the stroking. Furthermore, along the costal border it is often wise to stroke along it rather than to proceed from the hard to the soft parts. Over tumours or deeply situated organs, like the kidneys and spleen, the staff is placed approximately over the centre of them, vigorous stroking being employed.

After a considerable practical experience with the phonendoscope, both in hospital and private practice, I am led to believe that the expectations raised by Bianchi are not entirely realized. This is especially true in auscultation of pulmonary and cardiac sounds, for it offers few advantages over the ordinary binaural stethoscope. In some instances I have found it very useful; thus, in determining pericardial murmurs and in fixing the upper level of the fluid in hydrothorax or hydropneumothorax.

In auscultatory percussion of the lungs I have been disappointed, for the successive stroking over ribs and intercostal spaces produces changes in the tone which are very confusing and which only very long practice with the instrument will clear up. In mapping out the heart, however, the phonendoscope is exceedingly useful. The borders are determined with an ease and certainty which are offered by no other method.

A glance at Bianchi's diagrams will show that he is able to map out the lobes of the lungs and the auricles and ventricles of the heart. Neither of these have I been able to do; whether increased experience with the instrument will enable me to do so I am at present unable to determine.

In the examination of the abdominal viscera the phonendoscope is chiefly used to hear the sounds artificially produced—*i.e.*, auscultatory percussion. In ascertaining the size and situation of the stomach and colon, the instrument, so far as my experience will enable me to judge, has its greatest field of usefulness. Of its accuracy in outlining the stomach, I have repeatedly convinced myself by comparing its results with those obtained by other methods. Over the latter it has the great advantages of the simplicity and the relative rapidity with which these results are obtained. I shall therefore give the exact details: The tip of the staff is first placed in the seventh intercostal space in the left semiclavicular line, then on the linea alba adjacent to the left costal border; a third point is on the same horizontal line, one inch nearer the middle line; the latter point is not always required. If the stomach contains only air, the stroking should be gentle; if fluids are present, it must be stronger. The greater curvature, pylorus and cardiac ends are determined by successively marking the points at which the note changes. Even that part of the stomach which is covered by the liver may be determined.

The position of the colon may be determined. The strength of the stroking will depend on the nature of its contents, the rules being the same as those given for the stomach.

For the solid viscera, as the liver, spleen, and kidneys, its usefulness is more limited. For the liver, percussion is sufficiently accurate. It is only when it and palpation leave

us in the lurch that the phonendoscope may be required. Enlargement of the gall bladder may readily be ascertained with it. Strong stroking. The spleen is easily determined, and the kidneys may be outlined. I have been dissatisfied with the results obtained in seeking to locate these organs with the phonendoscope.

The bladder may easily be mapped out. Bianchi gives rules for determining the presence of fluid in the abdominal cavity.

Tumours may be outlined by placing the staff over the centre and stroking vigorously, the tip of the staff being moved successively in different directions if the mass is large.

The other uses of the instrument for the examination of aneurysms, the larynx, broken bones (crepitation can be obtained by almost imperceptible, and therefore painless, movements of the affected parts), fœtal heart sounds, &c., do not require any detailed descriptions.

In conclusion, I would say that, although my present experiences have not enabled me to corroborate all of the claims made by Bianchi, yet the phonendoscope is a very useful instrument, especially for outlining organs. It is true, as even Bianchi himself admits, that many of the above-mentioned data may also be obtained with the binaural stethoscope; nevertheless, a comparison between the two instruments will readily convince the unbiassed observer that the phonendoscope is in some respects a distinct improvement on the binaural stethoscope.

DISEASES OF THE NERVOUS SYSTEM.

23.—ARTIFICIAL FEEDING OF THE INSANE.

By L. Harris-Liston, M.R.C.S.,

Assistant Medical Officer, Home for Mental Diseases, Coton Hill, Stafford.

The persistent refusal of food amongst the insane is a symptom of frequent occurrence, which, when moral suasion has failed, has to be treated by forcible feeding. Of the last 200 patients admitted to a lunatic hospital for private patients, among whom refusal of food is said to be more common than among paupers, 27 required forcible feeding, which I performed on them nearly 3,000 times. Complete refusal of food for twenty-four hours in a strong well-nourished patient, or the missing of two meals by a feeble one, may be taken, as a general rule, to indicate the operation ; freshly admitted cases with a history of starvation

who are feeble, with weak pulse, and who resist taking food, should be fed at once. Of these 200 patients 85 were males and 115 females, and of the 27 fed, 12 were males and 15 females; this 27 does not include many patients whom the attendants were able to feed with a spoon, but only those who successfully resisted this method. Of these 27, there were 4 in a state of acute mania, 4 in a stuperose condition, 13 were melancholiacs, 4 were suffering from delusional insanity, and 2 were chronic dements; 12 of them were at some period actively suicidal. The effect of feeding was soon apparent in most cases, nutrition improving, some getting fat, and no doubt the lives of many were saved by its adoption; sometimes, but rarely, the pharnyx, œsophagus, or stomach became irritated by the tube, and then feeding by the bowel had to be resorted to; in one lady, a case of stupor, gastritis was set up, and curiously enough, the pyrexia was coincident with the commencement of her recovery.

Besides the improvement of nutrition, feeding has a lasting moral effect, in some cases a few feedings effecting a cure of the habit of refusal; it occasionally cures a delusion, as one case in a friend's practice exemplifies, a case in which he was "commanded" not to eat; after a few nasal feedings with a tube smeared with assafœtida he was commanded no more. A mere exhibition of the tube will cure the habit in some hysterical cases. The method of feeding adopted was the funnel and soft rubber œsophageal tube passed to the stomach by the mouth or nose; the latter way I now almost always use as generally preferable, its only danger being the passage of the tube into the larynx, of which the evidence, stridulous breathing and loss of voice, is at once perceived, and remedied by withdrawing the tube to the pharnyx, pouring a little food down tube, and as patient swallows pushing it down; the passage of the tube by the mouth is a more expeditious procedure, as a large tube can be used so that a quart or more of food may be given in a few seconds, and this is advantageous in old people and others who secrete a large amount of mucous about the throat which they cannot swallow while the tube is in the œsophagus, and which, collecting over the glottis, causes dyspnœa. The disadvantages of the passage through the mouth are the need of a gag, which is apt to injure the lips or break the teeth of a patient, and the possibility of the gag slipping out, and so rendering biting and swallowing the tube, or injuring the operator's fingers, probable. The latter accident happened to me once, causing a poisoned wound of a finger, and consequent inability to use the hand for a week, but during this time I was able to pass the nasal tube with the left hand, a statement which shows how easy the operation is.

Diet given.—Breakfast at 9 a.m.—A pint and a half of milk, two eggs, with one ounce of whisky. Dinner at 2 p.m.—A pint and a half of beef tea, two eggs, two ounces of port wine, and one ounce of maltine. Supper at 7 p.m.—A pint and a half of milk, two eggs, one ounce of whisky. The food is given warm, and the patient kept lying down for half-an-hour afterwards; medicines are given with the food as required; generally a purge is needed every two days, when half an ounce of castor oil may be added; occasionally the juice of half a lemon is added to the dinner.—*British Medical Journal, February* 13, 1897.

24.—THE UNCERTAINTY OF CEREBRAL LOCALISATION WITH REFERENCE TO OPERATION, ESPECIALLY IN CONNECTION WITH GROWTHS IN SILENT REGIONS WITH INVASION SYMPTOMS.

By Wharton Sinkler, M.D., Philadelphia.

The accurate localisation of a cerebral growth is never easy, and it should always be borne in mind that there are many cases in which tumours of the mid-brain give rise to symptoms which closely resemble those of a growth in the motor area. Even in cases which have been carefully studied for a long time, no tumour has been discovered on operation, although after death the growth has been found deep seated. Growths, which are most likely to cause errors of diagnosis are those which begin in silent regions, like the frontal lobe, for example, and which encroach gradually upon the motor area. The writer referred to the statistics collected by Starr. Up to 1896 there were 162 cases, in which the operation of trephining was done for brain tumour; of these cases the tumour was successfully removed, and the patient recovered in 72, and 48 cases, that is in about 30 per cent. no tumour was found at the operation. In 35 patients the tumour was successfully located and removed, but the patient died. Out of several hundred cases of brain tumour, which have been studied post-mortem by different observers, it was estimated that but 7 per cent. could have been successfully removed had operations been attempted before death. Attention was called to the great improvement in the results in brain surgery, and two cases were quoted which illustrated the difficulty of locating brain tumours, even when apparently distinct focal symptoms were present.

Case 1.—E. M., male, age 26 years; a printer by occupation. No history of syphilis or traumatism. When 25 years of age he had a convulsion without any assignable cause. The attack was general. After this he had no seizures for nine months, when he had an attack similar to the first. Since this time the attacks have changed in character and have recurred at various intervals, from several in a day to one in three months. The attacks when he first came under observation were as follows:—The primary movement consists in twitching of the left angle of the mouth and a sense as if the face were being drawn towards the ear. The left arm is then drawn up, and occasionally in an attack the legs are flexed. There is no aura preceding the attack, and there is no loss of consciousness. The eyes were examined, but with negative results. The patient's general health was good, the memory was preserved, and there was no paralysis of any part of the body. The patient continued under observation until his death in 1896. His condition remained about the same for three years, except that the attacks became rather less frequent. He continued at work, but gave up his trade for that of out-door work, and he attributed his improvement largely to the more healthy life that he was leading. In January, 1893, he began to complain of severe pain in head, situated over the left brow, and in the vertex. In March of this year it was found that optic neuritis was present. In spite of potassium iodide, the pain persisted with great severity, and the optic neuritis increased. It was therefore decided to trephine. The operation was done by Dr. Keen, and a large opening was made in the skull over the face center on the right side. The brain bulged immediately, showing great pressure, but careful probing failed to reveal the growth. The patient recovered speedily from the operation. Here was a case in which the symptoms plainly pointed to a cortical lesion, but although it was evident that there was a deep-seated growth, none could be found at the operation. The operation, however, afforded great relief to the symptoms. The pain subsided and the vision markedly improved. At the end of a year there was recurrence of pain, and optic atrophy took place. The attacks became again more frequent, but were confined to twitching of the face. In April, 1896, owing to the constancy of severe pain, it was decided to re-open the skull at the point of the original trephine opening. At this operation a well-defined tumour presented itself, but owing to the excessive hemorrhages it was not possible to make any attempt at removal. On June 5, 1896, the scalp was again opened, and a portion of the growth as large as a small hen's egg was removed. The mass sprung from the frontal lobe and extended to the fissure of Rolando. The patient experienced relief from pain, but there was complete left hemiplegia following the operation, and there was gradual failure of strength. The patient died July 3. No autopsy was made.

Case 2.—P. A., age 57 years, male; single. Denied syphilis. Temperate in his habits, says that he had good health until seven years ago. Had lived in the West in mining regions, and had been in a good many brawls, and once received a severe blow on the head. Seven years ago, without warning, began to have severe convulsive seizures. These involved the right side alone. There was loss of consciousness during the attack. In the intervals of the attacks he had frequently obscure sensations in the right arm, which he believed to be mild attacks. There was a perception of the movements in the right side before loss of consciousness. None of the attacks were followed by loss of power. The last severe attack occurred in April, 1895; since this he has had occasional vague sensations suggestive of the attacks, but none for past two months. About December 1, 1895, he observed progressive weakness of the right upper

extremity. Six or eight weeks later the right leg began to grow weak. On examination, February 7, 1896, there was marked left hemiplegia, and the face was drawn to the right. There was no aphasia. Knee jerks increased. Sensation preserved. Eyes examined by Dr. de Schweinitz, and the fundus was found normal. The symptoms pointed to a cortical lesion, which was at first probably irritative, and later became destructive. It was decided to trephine over the left motor area. On exposing the cortex it was not possible to demonstrate the presence of a tumour. The patient suffered no disadvantage from the operation, but no improvement took place. He grew progressively worse, and died 54 days after the operation. At the autopsy a tumour was found situated in the left frontal lobe. It was superficial, involving the cortex of the frontal lobe and dipped down into the gray matter and extended to the motor area. To the unaided eye the growth did not appear to involve the motor area. The brain was placed in Müller's Fluid for hardening for further examination.

The post-mortem in this case shows that even had the trephine opening been made directly over the growth, it could not have been removed on account of its having infiltrated the brain tissue. The symptoms during life were evidently the result of the proximity of the growth to the motor area. Such a case warns us to be thoroughly careful in studying in detail every symptom before deciding upon an operation, or at any rate before venturing to make positive diagnosis as to the location of the growth, and should also make us cautious as to the prognosis given in such a case. These cases should not discourage us from operative interference, because they illustrate the small risk attendant upon such operations, and also the relief, which is afforded to urgent symptoms, even when the growth has not been removed.—*Journal of Nervous and Mental Disease, December*, 1896.

25.—TRAUMATIC NEURASTHENIA AND HYSTERIA.

By Dr. Philip Coombs Knapp, Boston.

[The following is taken from the report of Dr. Knapp's paper, read before the New York Academy of Medicine :]

The paper was based on an analysis of 200 cases of traumatic neurasthenia and hysteria in the hospitals of Boston. Of these 103 were not, so far as Dr. Knapp knew, subjects of litigation. Of the other 97, most of them were sent him for the purpose of getting his opinion for use in court. He had rarely been consulted in any litigation cases for injury involving one or more peripheral nerves, and seldom for injury pointing definitely to spinal disease. The explanation was hard to make, for cases of spinal injury and injury of peripheral nerves were not infrequent in hospitals. Possibly in litigation cases of this class the symptoms were so definite that they were settled in or out of court without consulting specialists. The author differed

from Strümpell, who claimed that the genesis of most of the trouble in the litigation cases was psychical, the questions which constantly worried the patient's mind being: "Shall I get damages? How much shall I get? Shall I be able to work afterward?" Notwithstanding the malevolent psychical influences attending these cases—the desire for gain, the desire for putting the best foot forward, the gloomy prognostications heard on the witness stand—he could not accept Strümpell's view for reasons, some of which follow:—1. Under conditions precisely similar one saw the symptoms of traumatic hysteria or traumatic neurasthenia in non-litigation cases, in which the factors referred to were absent. 2. The symptoms developed almost immediately after the accident in many litigation cases before these factors could have acted. No doubt, however, factors connected with litigation aggravated the symptoms somewhat. Further, the relative frequency of the symptoms in the litigation and the non-litigation cases was about the same. In other words, he could find no symptoms in the one class of cases not present in the other, and which would warrant the term litigation hysteria or litigation neurasthenia. In many, but not all of the litigation cases, the patients had worried about the law-suit; but in the non-litigation cases the patients had also been disposed to worry, though about something else.

Dr. Knapp thought Strümpell had given insufficient weight to the physical influence and too much to the psychical. He classified the 200 cases according to the nature of the injury, the symptoms, &c. The injuries took place from railway accidents, getting on or off tramways, getting in or out of carriages, &c. In but few instances were bones broken. On the whole, the circumstances attending the two classes of cases, litigation and non-litigation, did not differ greatly, and, since the symptoms were very similar, the conclusion was drawn that the desire for gain in the one class played only an insignificant part in the genesis of the trouble. The author stated that psychical shock alone might produce hysteria or neurasthenia, but it was more difficult to answer the question whether physical injury alone, unattended by psychical shock, could do so. His own belief was that psychical shock played a subordinate part, and that physical injury was the important cause. Neuropathogenic heredity, upon which the French laid stress, he had found of minor importance. He was able to obtain a neurotic history in eight cases of hysteria, in seven of neurasthenia, and in a few there was a history of previous ill-health. Dr. Knapp then spoke of the symptoms, and said that traumatic hysteria and traumatic neurasthenia had many symptoms in common, the boundary line not being in all instances very clear. Among symptoms mentioned were

inability to work mentally or physically, headache, vertigo, pain in the back and limbs, paræsthesia, rapid pulse, loss of appetite, diminution of urine, exaggerated reflexes, congestions, coldness of extremities, &c. The differential points between neurasthenia and hysteria were mentioned, particularly those relating to contraction of the visual field, hemianæsthesia or local anæsthesia, and disturbances of special senses of a nature usually regarded as diagnostic of hysteria. While attaching weight to these evidences of hysteria, the author did not regard them as always diagnostic. For instance, in four of the cases of neurasthenia there was contraction of the visual field, without other stigmata of hysteria. But the majority of cases which presented cutaneous anæsthesia and contraction of the visual field were cases of hysteria. Regarding the prognosis, there had been difficulty in following up cases to determine the ultimate result. In 28 cases of hysteria 18 of them were litigation cases, 10 non-litigation cases. In the former one patient recovered completely, five patients improved considerably, seven very little, five died. Of the five that died one died of unknown cause, one had improved considerably but died of intercurrent pneumonia and delirium tremens, one steadily grew worse and died of a low form of pneumonia, two grew worse and died in exhaustion. It would seem from Dr. Knapp's observations that the remarkable recoveries which one heard of taking place as soon as damages were obtained did not appear. A number of cases had continued six to twelve years; they might improve, but still present some distinct symptoms. There seemed to be no direct connection between the intensity of the hysteria and the gravity of the prognosis. The longer the hysteria lasted the less likelihood of complete recovery. Some cases of neurasthenia progressed more favourably under treatment than hysteria, and, on the whole, he thought the prognosis was more favourable. But he had seen some cases of eight, twelve, and even twenty years' duration. The author then touched upon treatment. He thought some occupation was to be preferred to allowing these patients to brood over their troubles while doing nothing, yet judgment was required, lest they do too much or worry under the labour and anxiety of making a living. These people were apt to be looked upon as extortionists, but facts showed that the accusation was unjust. A considerable number of them never recovered their health, and the amount received in damages was, in the author's experience, inadequate, especially if the expenses of litigation were deducted. The law ought to be amended to hasten the court proceedings, as delay added to the gravity of the prognosis. It was best to urge prompt settlement out of court, whenever it could be done without too great sacrifice.—*Medical Record, February* 20, 1897.

26.—THE THYROID TREATMENT OF CRETINISM AND IMBECILITY IN CHILDREN.

By T. Telford-Smith, M.A., M.D.,
Medical Superintendent, Royal Albert Asylum, Lancaster.

[The following is taken from Dr. Telford-Smith's paper, read at the British Medical Association Meeting, 1896, in the discussion on Sporadic Cretinism :]

These pictures exhibited by Dr. Parker, showing as they do the condition of the cases before and after treatment, help us to realise, in a way no mere verbal description could, the almost marvellous change that takes place in these children, not only in physical condition, but also in mental state ; for I think we can see by the mere alteration in the expression of the faces that the mind as well as the body has been, as it were, awakened. We not only get an increased and improved metabolism, but we get, varying with age, a restarting of growth and development which raises these cases from a condition of permanent infancy to one which tends to approach the normal. There are, however, among idiots generally many cases showing defects, both of body and of mind, of a more or less similar character to those found in cretins, so that, to those at least who have to deal with large numbers of idiots, the wider question is inclined to occur :—Does defective function of the thyroid enter as an appreciable factor in the causation of idiocy ; and, if so, may not some degree of improvement, similar to that produced in cretins, be looked for in other cases during the administration of thyroid preparations ? Bourneville has shown, by a table he published of the weights of the thyroid in different cases of idiocy, that there is a considerable variation in the size of the gland. May there not also be variation in the completeness with which it fulfils its functions ?

Idiots belonging to the so-called Mongol type are those who most nearly resemble the cretin, both in physical aspect and in mental character. In idiots of this type we get the stunted growth, the dull heavy expression, with open mouth and thick lips ; the slow deliberate movement, and hoarse, guttural, and monosyllabic speech ; the mental apathy, and lack of spontaneity ; the sluggish circulation and sensitiveness to cold. A thickened condition of subcutaneous tissue is often found, with dulled cutaneous sensibility. The skin is coarse and dry, the hair short and thin. First and second dentition are delayed. As far as palpation enables one to judge, the thyroid gland is subnormal in size. Pseudo-lipomata I have not found. The

temperature is always subnormal, ranging between 96·5° and 97·5°. This type of idiocy occurs in about 5 per cent. of cases, and there are at present in the Royal Albert Asylum 19 Mongol idiots in a population of 560. The etiology of this type is probably complex. These cases are frequently the last children of large families, or the mother has been in a feeble state of health from various influences of a depressing nature, causes which are found acting in cases of myxœdema and cretinism. A phthisical ancestry is common, and Mongol idiots almost invariably die of phthisis, as myxœdemes and cretins are said to do. There is probably in the Mongol a more profound and general condition of intrauterine failure of development than in the cretin. Their whole organisation is, as Dr. Shuttleworth says, "unfinished"; and, judging only from the very simple convolutional anatomy of their brains, no great amount of cerebration can be expected from them. Still, from their many points of resemblance to the cretin, there seems a justifiable presumption that thyroid imperfection exists as one of their defects, and if this is so we should get some reaction during thyroid treatment.

I have for over two years been trying the effects of thyroid treatment on cases of Mongol idiocy, and, put briefly, my experience is as follows:—Improvement of a physical and mental kind takes place. This varies inversely as the age of the patient. The improvement is not nearly so marked nor so rapid as in the case of the cretin. The temperature reacts, but only slightly; it cannot be kept at normal. There is some improvement in the condition of the skin; it desquamates but does not become normally smooth. Tarsal ophthalmia (marginal blepharitis), which in these cases is almost chronic, improves considerably, and in some cases is cured. Growth improves, but does not react in anything like the rapid manner seen in cretinism. The mental condition of the child improves; the apathy is less pronounced; the patient becomes more active and spontaneous in his movements; he plays more like other children, and joins in the simple amusements or employments going on around him; he even works voluntarily. His speech is less thick and guttural, and he talks and chatters to a more normal extent. His mental reflexes all seem more active, and there is a decided advance on the patient's previous rather vegetable existence. I have tried the effect of thyroid treatment in some other cases of idiocy, cases in which the only resemblance to the cretin has been in the condition of mental apathy and disinclination to movement or speech, and where there has been evidence of diminished metabolism, as shown by a constantly subnormal temperature, a condition, however, which is common in idiots. In these children of 8 to 9 years of

age, with a daily dose of one 5-gr. tabloid, there has been a visible improvement, speech is more spontaneous, and apathy is less. The temperature has risen about half a degree, but is still subnormal. There is one practical point in the course of treatment of cretinism by thyroid gland which has been brought out by some of Dr. Parker's slides, and which I have found in my own experience—that is, that the growth of the skeleton becomes so rapid that some softening of the bones takes place, so that the leg bones are liable to become bent if the child is allowed to go about. I have found extreme bowing of the legs to take place during treatment, and I have had to place the patient in bed, and I would warn those treating cases to be on their guard against this complication. In conclusion, I think that in cases of Mongol idiocy thyroid treatment should be pursued, the earlier the better. Caution should be observed in the dose, as the heart is under-sized and weak in these patients. A small dose administered daily with dinner, and increased very carefully, will act best (from half to three 5-gr. tabloids daily). The temperature, weight, and state of general nutrition should be watched in all cases. In many cases of mental apathy and disinclination to movement or speech in idiot children not otherwise cretinoid, I think treatment with thyroid is well worth a trial. If in these children we can, even to a small degree, improve cerebration, and make movement more spontaneous, the work of training them and developing them in an educational manner is considerably assisted.—*British Medical Journal, September* 16, 1896.

27.—THE TREATMENT OF GRAVES' DISEASE BY THYMUS GLAND.

By Hector Mackenzie, M.A., M.D. Camb., F.R.C.P. Lond., Assistant Physician and Lecturer on Pharmacology and Therapeutics, St. Thomas's Hospital, &c.

[The following summary and conclusions are based on an analysis of 35 cases, of which 20 were under the author's own observation :]

Of the twenty cases I have now recorded under my care, treated by the thymus gland, one died, and in six no improvement was observed. In thirteen cases there was some improvement. In none of these, however, have I observed any such decided effect produced on the most important symptoms, and on the progress of the disease, as could lead

me justifiably to conclude that the thymus had any great therapeutic activity. For the sake of comparison, I propose to contrast the progress of these twenty cases with a similar number treated by other methods.

In the beginning of this paper I stated that the symptom which, up to the present time, I have found most intractable is the rapidity of the pulse-rate. One must, of course, avoid the error of taking the diminished frequency resulting from rest as a result of a remedy. In my cases I have endeavoured to avoid this fallacy. In twelve of the cases no alteration in the pulse-rate was observed, and in two it increased slightly. In six it diminished; in all but one of these the diminution was only slight. In the one case in which there was very considerable slowing this improvement was only observed after the remedy had been taken for some months, and it seems doubtful whether the thymus had anything to do with the change, as the pulse-rate subsequently increased again while the remedy was still continued in large doses. Of the twenty comparison cases no alteration in the pulse-rate was observed in eleven, and in two it increased slightly. In four cases there was marked but gradual diminution, and in three there was slight lessening of the frequency. It would therefore appear that, as regards the effect on the heart, there is nothing in favour of the thymus treatment. As regards the thyroid gland, in only three cases was there a material diminution in size. In two cases the goitre actually increased in size while fairly large doses of thymus were being given, and in another it increased after first diminishing. Of the contrast cases, the goitre more or less diminished in four, and in a fifth the enlargement entirely disappeared. An increase in size was noted in only one case. In thirteen no change was observed. It therefore appears that the progress of the enlargement of the thyroid has been much the same whether thymus was given or not. The exophthalmos decidedly diminished in only one case, and in that it had commenced to lessen before the thymus treatment was started. In the contrast-series three lost their exophthalmos.

As regards the general bodily condition, in eight of the cases the weight was not recorded. In three there was no change. In four there was loss of weight. In three of these this amounted to only a few pounds; but in one of the three, the fatal case, there was considerable further loss of weight after the remedy was discontinued. In the fourth case the patient lost 14 pounds in weight, but the loss was quickly made up for when the medicine was stopped. In a fifth case the patient lost weight to the amount of 11 pounds during the first two months of the treatment, but gained 20 pounds during the next two months. In four cases there was a marked gain in weight

of from 4 to 15 pounds. Of the comparison series, I find loss of weight noted in only one and a marked gain noted in three cases, amounting to 16 pounds in one case and 35 pounds in another. This, again, is somewhat in favour of the series treated without thymus, but I do not look upon the difference as at all significant. The dose of thymus given varied from several ounces to 10 or 15 grains a day. The cases which had large doses did not appear to do any better than those treated with small doses. At the same time it is quite evident, from the record of several of the cases, that the patients themselves were satisfied that the remedy benefited them. When it was discontinued they asked to be put back on it. In no case did it produce any unfavourable symptoms. The combination of thymus and thyroid was employed in four cases, and in two of these it did not appear to be very well borne. The last case, which was the fatal one, had no treatment for some weeks preceding her last illness. The size of the thyroid enlargement appeared to make no difference on the progress of the case. About the same proportion of the cases, with little or no enlargement, did well as of those where there was a large goitre. It will be observed that I prescribed other remedies along with the thymus in several of the cases, such as belladonna, bromide of potassium, sodium phosphate, &c. This would diminish the value of my observations, if I were endeavouring to maintain that the thymus gland had any specific value ; but, as my thesis is that it has no specific influence, the administration of other remedies is not of material importance.

An important point which should be borne in mind is that the most remarkable of the cases of recorded benefit have been those in which the lamb's thymus has been employed. Möbius and Taty and Guérin, who failed to observe benefit, expressly mention that they employed the calf's thymus. I am not able to give exact particulars as to which form has been employed in all my cases. The tabloids used were supplied by Messrs. Burroughs, Wellcome & Co., who informed me they were made from the thymus of very young calves. The extract of thymus was prepared for me by Mr. White, the pharmacist to St. Thomas's Hospital. It was prepared from lamb's thymus whenever it was procurable, and at other times from calf's. The calf's thymus was used in two cases, when large doses were used. It seems unlikely that any important therapeutic effect should exist in the lamb's thymus and not in the calf's ; the reported success of cases treated with tabloids of calf's thymus may be set against the failures.

The conclusion at which I have arrived is that the thymus gland possesses no specific action in Graves's disease. I have found it in most cases to have no effect either on the heart,

on the goitre, or on the exophthalmos. At the same time it appears to be a remedy of some value, improving the general condition, and, in this way, may assist toward the recovery of the patient. I should, at present, place it in the same class of remedies as cod-liver oil. I am of opinion that the dose, to be of any use, should be at least one or two drachms a day, of the fresh gland or its equivalent, in the form of extract or powder.—*American Journal of Medical Science, February*, 1897.

28.—THE PATHOLOGY AND TREATMENT OF MIGRAINE.

By Dr. C. A. Herter.

[The following is taken from Dr. Herter's paper. The value of antipyrin appears to be rather under-estimated. Given quite at the outset, it has often in our experience aborted the attack. Emptying of the stomach by the tube or otherwise is undoubtedly a valuable measure.—E.F.T.]

The treatment to be advocated, Dr. Herter said, was a departure from that usually followed. The typical migraine paroxysm seemed to be almost always associated with nutritive disturbances, which should be considered as part of the migraine paroxysm. Too much attention, he thought, had usually been given to the relief of the pain. There were many features in a typical attack of migraine indicating gastro-intestinal disturbance. During the period of marked headache there was usually no great evidence of intestinal derangement, although there was often at least slight constipation. The fæces generally appeared normal. The urine passed during the period of marked headache was exceedingly scanty, high coloured, and of high specific gravity and acid. Apparently the quantity of uric acid was diminished, and the excretion of urea and the chlorides was regularly diminished, due chiefly to the temporary abstinence from food. The ingestion of food often caused severe nausea and vomiting, but sometimes it was significant that it caused a return of the hemicrania. There was a rapid transition from the period of diminished excretion to that of increased excretion—sometimes within twenty-four hours. Usually after a severe migraine paroxysm the urine was increased in amount on the second and third days after the headache. The uric acid was increased and the extractives also. In seven different patients he had had an opportunity of examining the contents of the stomach in the paroxysm. In

these cases there had been evidence of complete arrest of gastric digestion. In one case he had found considerable undigested food in the matter ejected from the stomach nearly nine hours after dinner. There was also evidence that not only the secretory but the motor activity of the stomach was diminished or temporarily arrested. It was probable that the secretory activity of the small intestine suffered in a similar manner.

The first step in the treatment of migraine seizure should be the washing out of the stomach with water at a temperature of not less than 105° F. The chief effect of this treatment is to relieve the pain, and it occasionally aborts the attack. The best results are obtained when the stomach washing is done just at the beginning of the attack of headache. The effect of lavage is better where the stomach contains food, but it should be employed in any case. Where lavage was inconvenient, the patient should drink hot water. While the results were marked and rapid the *rationale* of the method was not so apparent. It was possible that in migraine the tolerance of the nervous system is suddenly exhausted, and hence the removal of a relatively small quantity of toxic material from the stomach may be sufficient to decidedly influence the attack. After the stomach washing the patient should be given a rapid-acting cathartic, one of the best being a tea- or dessert-spoonful of Carlsbad salts. His observations would seem to show that in migraine intestinal putrefaction was not an important factor. It was desirable to avoid severe purgation on account of the undue irritation produced. The cathartic should be aided by a hot soap-and-water enema, and this should be given even though there had been a recent stool. If this active treatment were begun within the first hour of the headache it not only markedly relieved the pain but often cut short the paroxysm. When the headache returned it was more easily treated after these initiative steps. Antipyrin he had found unreliable and apt to cause severe digestive and vaso-motor derangement. Phenacetin in doses of ten grains, repeated if necessary, was usually useful. Antifebrine, in doses of five grains, relieved the pain still better, but sometimes acted unpleasantly by depressing the heart. The best of all seemed to be ammonol. This was claimed to be a mixture of an ammonia salt with antifebrine. Black coffee, without sugar, he had found often very efficacious, and the same might be said of citrate of caffeine. Where the face was regularly much flushed, ergot sometimes acted well, but usually this preparation was not easily retained. He would not care to use nitro-glycerine except in cases in which there was distinct flushing of the face. Local applications could only be regarded as feeble adjuncts to the ordinary treatment. It was a pernicious practice to give

one of the antipyretics mentioned and not insist upon temporary rest and quiet.

Dr. Herter said that although it might be safely assumed that there was a toxæmia present in severe attacks of migraine, we must admit our utter ignorance of the nature of this toxæmia. The theory of toxæmia, however, did not explain the unilateral character of many of the symptoms of migraine and some other phenomena. We must admit, as in epilepsy, that there was an inherited tendency in the nerve cells which rendered them excessively sensitive to the action of such poisons. To this must be added another important factor—fatigue. He was inclined to believe that the digestive derangements and the toxæmia always preceded the headache, although doubtless at the height of the attack the nervous and digestive conditions reacted upon one another. In this connection it should be mentioned that sexual excitement was often a marked exciting cause of migraine. Milk should constitute the proteid food of at least one meal a day, and red meat should not be allowed more than once a day. Many of these patients cannot tolerate fruits any more than gouty individuals. He had known a number of most intractable cases of migraine surprisingly improved by a change to outdoor life. Horseback riding and bicycle riding he believed to be the best forms of exercise for these persons.

In the discussion Dr. M. Allen Starr expressed his hearty approval of the paper, and particularly of the therapeutic considerations embodied in it. During the past two years he had given the Rachford method of treatment a careful trial in several severe cases of migraine. The results had been exceedingly good, even in some very obstinate cases in which all the recognised methods of treatment had proved of little value. He had found a few cases in which muriatic acid given at the time of the paroxysm would arrest it. The "Rachford salt" consists of ten parts of phosphate of sodium, four parts of sulphate of sodium and three parts of salicylate of sodium, of which one drachm was to be taken in the morning. As this dose was insufficient to cause purgation he hardly knew to what to ascribe the benefits derived from this treatment. Rachford had insisted upon the necessity of coating the pill of permanganate of potassium in such a manner as to have the pill remain undissolved until it reached the intestine. By means of a keratin coating he had had capsules prepared containing permanganate of potassium and salol. Regarding the diet, he said that it seemed to him very essential to restrict the quantity of red meat. He had found abdominal packs and abdominal massage quite useful in cases of migraine.—*From the Journal of Nervous and Mental Disease, January*, 1897.

29.—EPIDEMIC CEREBRO-SPINAL MENINGITIS.

By Professor HEUBNER, Berlin.

O. Heubner (*Deut. Med. Woch.*, 1896, xxii, 423) says that the relation of the pneumococcus to cerebro-spinal meningitis, as a cause, is not satisfactory. Weichselbaum in 1887, and later Jaegar of Stuttgart, demonstrated in epidemic meningitis another micro-organism, which he found in the meningeal exudate, whose individuality is positive. Its characteristic is that it appears in the form of a diplococcus, frequently as a tetracoccus, and is usually found within the pus cells. These physicians demonstrated this meningococcus intercellularis in the bodies of those dying of cerebro-spinal meningitis. The author believes that he was the first one able to demonstrate this microbe in the living subject. His first case occurred in the spring of 1895, in a girl one-and-a-half years of age, in whom a diagnosis of cerebro-spinal meningitis had previously been made. Since then, six more cases occurred in his clinic, and Dr. Finkelstine added two more from other clinics. In all the cases which died, the autopsy confirmed the diagnosis. In these cases, spinal puncture, according to Quincke, yielded a turbid, sometimes even a purulent fluid, which contained pus corpuscles in great number. Within these there was always discovered the diplococcus or tetracoccus, and in such numbers and arrangement as to remind one strongly of the behaviour of the gonococcus. It seemed important to discover whether this new microbe would also produce inflammatory conditions in animals. This was done in the following manner. The needle of a hypodermic syringe, after shaving and disinfecting the skin of the animal, was plunged between two spinal processes in the lumbar region, and when a few drops of clear fluid oozed out through the needle the infected liquid is then injected into the dural sac. The first experiments were negative, although pure cultures from Jaeger, from the author's own cases, and fluid taken directly from the spinal canal of a patient was used.

It was then supposed that the animals used in the experiment were immune to this poison, and others were taken. In a young dog the experiment was still questionable, but in two goats an undoubted positive result was obtained. One of these goats, previously perfectly healthy, was injected with a bouillon culture of Jaeger's germs. She soon became quite feverish, and died in one-and-a-half days. Autopsy disclosed a hemorrhagic spinal meningitis, and from all the diseased portions proof of the presence of the meningococci was obtained. The second animal was inoculated twice with a watery culture from one of the first cases, with the result that it sickened, but soon recovered from the fever, and rapidly emaciated. Lastly, the liquid

exudate from the fifth case was directly injected into the animal; soon after it became ill, and died within a day. At the autopsy a meningitis, extending the entire length of the spinal cord, was found, with hydrocephalus acutus. In the hydrocephalic fluid were found pus cells containing the tetracocci. These experiments seem to prove that the virulence of the meningococci is not as great as that of the pneumococci. The injection of some pleural exudate containing pneumococci into the spinal sac of a rabbit rapidly caused the death of the animal, while the fluid containing the meningococci had no ill-effect on it before. This lower virulency of the meningococcus explains some clinical and epidemiological facts. A meningitis produced by the pneumococci is seldom recovered from, and frequently produces death in a few days. In epidemic cerebro-spinal meningitis, about one-half or one-third die, and the duration of the disease often stretches over weeks or even months. Should it be still further proven that the meningococcus intracellularis stands in etiological relation to epidemic meningitis, we would be able by lumbar puncture to differentiate the sporadic cases of cerebro-spinal meningitis from epidemic meningitis.—*Pediatrics, November* 16, 1896.

30.—ACUTE ANTERIOR POLIOMYELITIS.

By Joseph W. Courtney, M.D.,
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Boston City Hospital.

[The following is taken from Dr. J. W. Courtney's paper in the *Boston Medical and Surgical Journal*, December 17, 1896:]

The striking and essential features of the case under notice are the absence of prodromata, the suddenness of onset, and the gradual regression of the paralysis up to a certain point. To go more into detail, the disease may come on while the child is playing about, or it may be discovered in the morning after an apparently normal night. The fever which is often present may last only a few hours or a few days and reach to the height of 104° F.; only in very severe cases does it remain above this point for any considerable period of time. Gastro-intestinal disturbances may play the prominent rôle.

Pain is generally stated by the text-books to be absent; but this is by no means so in all cases, and must be borne in mind when attempting to differentiate between the disease in point and scorbutus, or rheumatism. The bladder and rectum are, as a rule, not affected, and coma or convulsions are rarely present. With the subsidence of the fever, vomiting, &c., the most

prominent feature of the disease, the paralysis, comes into play. This is of the flaccid variety, and is associated with atrophy of the affected muscles, alteration of the electrical reactions, and the diminution, or complete loss of the deep reflexes. The paralysis is, in reality, probably present from the start, and is then usually widely distributed. It may involve all four extremities and even the parts supplied by the lower cranial nerves.

In one of the cases brought to the clinic disturbance of speech was noticed by the parents at the onset. After three or four weeks, when spontaneous retrogression has ceased, some inference may be drawn as to the limbs, which will be more or less affected permanently. This permanent palsy may affect one or more parts of the body, but the lower extremities are much the commonest seat, the right being more frequently so than the left. The paraplegic and monoplegic forms are the most frequent, and the paralysis of a lower extremity is more frequent than that of an upper. The muscles involved are usually functionally and not anatomically related, as is frequently seen in the leg, where the tibialis anticus is paralysed in connection with the quadriceps extensor femoris. These muscles are supplied by different nerves, but are associated in the extension of the leg in walking. In certain cases but a single muscle is involved, as the abductor indicis.

The atrophy which comes on in connection with the paralysis is usually of rapid development, and a marked difference has been noted between the size of the paralysed and non-paralysed limb within seventy-two hours of the onset. The distribution of the atrophy corresponds exactly to that of the paralysis.

The chronic stage of the disease is the most distressing, owing to the contractures and deformities of the limbs.

Differential diagnosis.—In the early stage, when the gastro-intestinal disturbance has been allayed and it is found that the victim is totally unable to move in bed, it is a common error to attribute this to the inertia of prostration. In this regard it should be remembered that prostration never causes total immobility, and certainly never a complete paralysis of one set of muscles.

The next most popular diagnosis is meningitis. In this latter it should be borne in mind that coma and convulsions—very rare in acute anterior poliomyelitis—are usually the first of a train of cerebral symptoms such as projectile vomiting, rigidity of the neck, headaches, cranial nerve affections and the like.

As regards the acute cerebral palsy of children, while the mode of onset may be exactly identical with that of the spinal, the clinical features are vastly different. In the spinal type, as I have attempted to show, the onset is sudden, with fever and vomiting, and is rarely attended with coma and convulsions ; in

the cerebral the onset is also sudden, with fever, but in this coma and repeated convulsions are the striking features. The spinal paralysis is flaccid, associated with atrophy ; the cerebral is spastic, has no atrophy, but marked rigidity and contractures. Spinal paralysis may be general, or limited to one member or even a single muscle ; whereas the cerebral is usually hemiplegic or paraplegic. In the spinal type one gets altered electrical reactions ; in the cerebral normal reactions obtain. In the spinal, too, the deep reflexes are usually lost ; whereas in the cerebral they are very much exaggerated. The intellect in the former is never permanently affected ; in the latter it is not infrequently involved, and a concomitant epilepsy is not uncommon. In the transverse myelitis we have perfectly definite sensory disturbance with increased reflexes and sphincteric involvement.

Pott's paraplegia is differentiated by the deformity of the spine, by its very gradual onset, and by the spastic nature of the paralysis ; moreover, the deep reflexes are increased, and radiating pains are present very early in the disease.

Peripheral neuritis usually causes a symmetrical bilateral trouble, is rare at the age when infantile paralysis is most common, and the pain and tenderness over nerves and muscles are of much longer duration than they ever are in the latter disease.

Within the last few years infantile scorbutus has been several times mistaken for infantile paralysis. At first sight the clinical picture where we have to do, for instance, with a hemorrhage into a knee-joint is not unlike that of certain cases of the spinal disease. There is apparent paralysis of the leg, and it may be impossible to elicit the knee-jerk. Scurvy, however, occurs most commonly about the eighth or ninth month, and always in bottle-fed infants ; and a careful examination will elicit the fact that the apparent paralysis of a leg is in reality but a limitation of motion due to the pain in the joint, and that the absence of the knee-jerk is due simply to the muscular spasm and not to any nerve lesion. Besides this, there is in scurvy little or no fever, and no great amount of general prostration. Personally, I think that the psuedo-paralytic affections of scurvy are by no means as sudden as is generally supposed.

Prognosis.—The tendency is to take an altogether too dismal view of the ultimate outcome of this disease. There is absolutely no necessity to predict that the child will be a hopeless cripple for life, as it is impossible to tell at the outset to what extent retrogression of the palsy will go on. It is even a fact that the permanent damage is sometimes less in certain cases in which at the outset the paralysis is very severe, than in others which start in less violent fashion. The muscles which show

early and persistent changes in electrical reactions are the ones which should cause the most apprehension.

Treatment.—As a large majority of cases are seen by the family physician at the onset, he should, in directing his treatment, keep constantly in mind the fact that the lesion is primarily a vascular one, and do his utmost to limit the inflammation and preserve the integrity of the nervous structures by the use of counter-irritants and vaso-constrictors. For this purpose the child should be kept in a quiet room, and small doses of some antipyretic, together with bromide and ergot, be given. Locally cold applications and mild counter-irritants over the affected portion of the spine are indicated. The child should be carefully fed, and the bowels thoroughly purged by the use of small doses of calomel.

It is as regards the effectiveness of therapeutic measures in the chronic stages that most text-books are misleading, and this is a point I would particularly emphasize. The error arises presumably from the fact that the authors of such books base their deductions on the pathological condition rather than on clinical facts. Even Gowers states that at the end of six months all possible recovery is nearly completed.

Now this is distinctly not so, for it is not uncommon in a large clinic where cases are followed up and treated for years, to see children who were totally paraplegic at the end of six months and even a year, able to walk—with difficulty it is true—at the end of three or four years of faithful and persistent treatment.

As to treatment, it requires no elaborate explanation. It consists in the intelligent application of electricity and massage, and should be begun as soon as the acute stage has passed, and persisted in over the space of months or years. If the muscles react at all, faradism should be used for ten to fifteen minutes, two or three times per week. The massage should be given by a competent masseur or masseuse.

Formerly the custom prevailed of immediately putting a paralysed limb into orthopedic apparatus, and the natural outcome was that the paralysed muscles, finding their functions supplied by mechanical means, made no effort to maintain their nutrition, and the resulting atrophy was rapid and extreme.

I do not mean to imply that surgical or mechanical measures are never necessary ; they are certainly to be borne in mind as a last resort. It is better, of course, to have a tenotomy done in a case where the joint deformity arising from the over-contraction of non-paralysed muscles is extreme and unyielding to both electricity and massage ; but even in these cases we should return to our previous treatment as soon as the child has sufficiently recovered from the operation.

DISEASES OF THE ORGANS OF CIRCULATION.

31.—ENDOCARDITIS IN CHILDHOOD.

By Charles Godwin Jennings, M.D., Detroit, Michigan.

[The following is taken from Dr. Jenning's paper :]

Every case of acute rheumatism, of chorea, of scarlatina, and, less emphatically, of diphtheria, measles, and other infectious and septic fevers should be looked upon as a possible cause of endocarditis. Seventy to eighty per cent. of the cases of heart complication in early life are rheumatic. In acute rheumatism in childhood only a minority of those affected escape endocarditis. British Collective Investigation Statistics give, in males, 72 per cent. of heart affections. At every visit to a case of rheumatism the physician should demonstrate the presence or absence of endocarditis. It is an early complication, coming always in the first week of the disease, rarely after the tenth day. It not unfrequently is the first manifestation of the process, the joint inflammation following it. It is necessary to bear in mind the erratic clinical history of rheumatism in childhood. It is often unrecognised until the heart complication brings into bold relief the etiology of a day of growing pains, a fleeting joint stiffness, a febrile erythema, or a tonsilitis. An acute joint pain or stiffness, however trifling, whether in one joint or more, with a rise of temperature, is rheumatism with but rarely an exception. The etiological relation between chorea and rheumatism explains the frequency of chorea with complicating endocarditis. Frequent heart examinations should always be made in cases of chorea. Second in importance to rheumatism in the etiology of endocarditis in children is scarlatina. The heart complication is a late one, usually appearing in the stage of desquamation. Acute scarlatinal nephritis increases the liability to heart inflammation. A frebile temperature, a rapid pulse, precordial distress, or, in fact, any interruption in the convalescence from scarlatina should direct the physician's attention to the heart. While not so frequently seen in diphtheria, measles, and other microbic diseases, endocarditis should always be in mind as a possible complication.

The symptoms of the onset of endocardial mischief show the greatest variability in intensity. Developing during the activity of a rheumatic arthritis, it will frequently progress for several days without perceptibly changing the clinical history of the case, and even when the primary disease has passed, the conditions may not cause symptoms until myocardial debility

and dilatation of the heart disturb the rhythm and force of its action. This masked endocarditis is common in children, in whom the inflammation is so often insidious and subacute. When symptoms attend endocardial infection, those which are characteristic are, fever, precordial pain or distress, palpitation or disturbed rhythm, and dyspnœa. Rarely, a sharp chill and high fever usher in the disease. Usually the febrile movement is of a mild, remitteut type ; but there is no rule. Palpitation, rapid or slow heart, or any form of arythmia is very significant. Precordial pain or distress always directs attention to the heart. Dyspnœa comes with dilatation and, of course, would lead to physical examination. Unfortunately for accurate diagnosis physical examination does not always reveal endocardial mischief in its early stage.

The physical signs which appear are :—Tumultuous action, feeble action, murmurs, and apex reduplication of the second sound. With the inflammation about the mitral orifice, its most frequent location, there is either systolic or presystolic apex murmur. When about the aortic orifice, either a systolic or diastolic basic murmur. Because of myocardial paresis the murmur is at first soft and blowing. Later, from various physical changes in the vegetations or in the heart wall, it may assume different characteristics. It should be remembered that in children pericarditis is a very usual attendant upon the endocarditis of rheumatism. A confusion of physical signs may then be presented that time only will untangle. Reduplication of the second sound at the apex is a frequent physical sign in children. This is probably the result of a thickened and slowly working mitral valve. Then the diagnosis of endocarditis will depend upon the discovery of an endocardial murmur in connection with other evidence of an acute cardiac affection. The treatment of acute endocarditis is directed to the primary pathological condition and to the relief of symptoms caused by the heart inflammation. Except in rheumatism the cardiac incident should not interrupt the proper therapeutics of the primary disease. The preventive treatment of cardiac inflammation should be one of the essentials in the therapeutics of rheumatism.

The two measures most useful are the salicylates and rest. The control of the salicylates over rheumatism is specific, and should be pushed to the full antidotal point at the beginning of the disease. They exert no control over the cardiac inflammation when it is once lighted up. Their action is preventive. Salicylate of sodium is a powerful cardiac depressant, and when a heart complication has developed it must be used with caution. Substitution of the alkalies with a less toxic salicylic compound is to be commended. To a structure threatened with an infective

inflammation, rest is a potent preventive. Cardiac rest can be only relative, but every beat that can be saved a threatened heart during the first week of an acute rheumatism helps it to resist the septic invasion. Opium, phenacetin, or the other analgesics are our most efficient aids in securing quiet during the progress of the articular symptoms and should be used with a free hand. When endocardial infection has taken place, the essential part of the treatment is rest—physical, mental, emotional rest—as absolute as it can be made. Excitement of the heart's action usually attends the onset of endocardial infection. Direct cardiac depressants and sedatives should be used with extreme circumspection. At this state digitalis is not indicated. Aconite is valuable, but must be given with care. Cold compresses safely and pleasantly control tumultuous palpitation. Central sedatives, like Dover's powder and phenacetin, secure sleep, quiet pain, and give the heart rest. The myocardial debility that soon appears may demand careful stimulation. For sudden failure, brandy, compound spirits of ether, and caffein, hypodermatically, act with promptness. Digitalis, in the long run, best holds up a flagging heart. The realisation of the weakness of the inflamed myocardium and the dilated ventricles will insure caution in its adminstration.

Relapses are characteristic of the endocarditis of childhood. The necessity of prolonged rest, until the danger is past, and until compensatory hypertrophy succeeds the dilatation of the ventricles, cannot be too strongly emphasised.—*Pediatrics*, *December* 1, 1896.

32.—MALIGNANT ENDOCARDITIS.

By George Dock, A.M., M.D.,

Professor of Medicine in the University of Michigan.

[Dr. Dock relates an interesting case of staphylococcus infection with endocarditis simulating malaria :]

On admission.—C. D., aged 34 years. Patient tosses in bed, does not speak, though he uttered one or two sentences soon after admission. Protrudes tongue when chin is pressed ; moves slightly when pricked in various parts. Pupil reflexes and motion of bulbs normal. Examination of lungs negative. The heart dulness is slightly enlarged ; apex beat not visible nor palpable ; the sounds faint, but apparently clear. Owing to the great rapidity of the heart's action auscultation is unsatisfactory. Liver dulness extends to just below the margin of the ribs. Splenic dulness enlarged ; the spleen can be felt as a soft mass about an inch beyond the margin of the ribs. There is diarrhœa, with frequent watery stools. There are no malarial parasites in fresh or stained preparations of the blood ; no pigmented leucocytes ; no bacteria (in preparations stained with Loeffler's methylene blue, cultures not made). A diagnosis of pyæmia was made, the primary focus assigned to the cranium on account of the history. In the absence of localising signs an operation

was not attempted. The temperature for ten days before admission was reported as forming a double curve daily, with one paroxysm at night and one at noon. This was confirmed by careful observations. Both sets of paroxysms postponed irregularly. There was a severe and prolonged chill during the rise of temperature. Sweating did not occur at all. The pulse was usually between 100 and 120 in the apyrexia, rising to 180 or more in the paroxysms. At the height of the paroxysm the pulse could not be counted. Urine contained a trace of albumin and a few pale granular casts. Early in the morning of the fourth day after admission the right arm and leg became paralysed. The heart became weaker. A few small hemorrhagic spots appeared in the skin of the abdomen. Cyanosis and frequent respiration appeared in the afternoon, and death occurred shortly after midnight.

Post-mortem diagnosis.—Septic endocarditis (mitral valve); dilatation and hypertrophy of the heart; septic and anæmic infarcts of the spleen and kidneys; white thrombus of left internal carotid artery; anæmic softening of brain; parenchymatous degeneration of organs; goitre. Multiple foci containing *staphylococcus pyogenes aureus.*

This history, given without any leading questions, is in perfect agreement with the results of the autopsy. The fevers of typhoid and intermittent character were, almost beyond doubt, evidences of the septic condition. The mode of infection could not be discovered. Venereal disease was denied and the autopsy gave no sign of the point of origin, so that this must be included among cryptogenetic cases. The idea that the primary focus was in the brain must be given up in the light of the histological examination. The diagnosis of pyæmia was evidently as accurate as could be made when the patient came under observation, although it can hardly be doubted that at an earlier period a heart lesion could have been recognised. There are, of course, cases of malignant endocarditis without symptoms on the part of the heart, as Leyden showed long ago in a classical article. But in the present case, although loss of compensation was probably not present, I can not doubt that a murmur existed before the heart became weak. The position and shape of the vegetation resembled to a remarkable degree those features in Case 1 of my former paper, in which there was a very loud murmur. In the case of D. such a murmur, with the slight enlargement, the suspicious history, the temperature curve, and the negative blood examination, would have enabled one to recognise the cardiac affection. But the weakness of the heart, its rapid action, and the restlessness of the patient in his final illness, all conspired to make impossible an accurate examination, and, though septic endocarditis was considered, it seemed more probable there was pyæmia without a special, or at least a primary, affection of the heart. This case furnished a striking evidence of the value of the blood examination in excluding a suspected malarial infection.

The marked intermissions of septic fever, with or without a rhythmical course, do not depend on a peculiarity of the germ, so far as we can discover. In staphylococcus (aureus and albus) infections both continued and intermittent fever

may be observed in different cases. It seems worth mentioning that my patient had no history of genuine malarial fever at a previous time. He did not live in a malarial district; his organs showed no evidence of old malarial disease.

In the case now reported the absence of sweating was a remarkable feature. This may happen in both malaria and sepsis, but is perhaps more common in the former, so that in a doubtful case the absence of sweating is usually looked on as proving the absence of sepsis. The case now reported shows how fallacious this would be. It still seems impossible for many to realise that intermission does not always mean malaria. In close relation to the diagnostic and nosological error is a therapeutic one. Quinine is still given by many in diseases with chills or with intermissions, even by those who do not consider that the cases so treated are malarial. The idea still prevails that quinine has some peculiar antiperiodic properties, though it is now known that the antiperiodic action so striking in malaria is only an accident due to the cessation of the periodic symptoms caused by the parasites that the quinine has the power of rendering harmless.—*New York Medical Journal, January* 30, 1897.

33.—MITRAL STENOSIS PRESENTING A WIDELY DISTRIBUTED TO-AND-FRO MURMUR RESEMBLING THAT OF AORTIC INCOMPETENCE.

By Graham Steell, M.D., F.R.C.P.,
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[The details of the illustrative case, &c., have been omitted here.]

The frequency of diastolic murmur of one variety or another in cases of mitral stenosis is very great; according to my own observation of sixty cases in as many as 80 per cent. It may therefore be well at the outset to place before the reader a statement of the varieties of murmur referred to. (1) There may be, and often is, a murmur of complicating aortic incompetence. Rheumatic endocarditis damages the aortic valves as well as the mitral in a considerable proportion of cases, probably about 50 per cent., although the aortic lesion is often trifling and of little or no clinical significance. (2) There is that rare diastolic murmur I term "the murmur of high pressure in the pulmonary artery." That such a murmur does

occur is generally admitted, but its practical importance is small, occurring, as it does, only in long-standing cases and as a trivial feature among many pronounced ones. Moreover, it is seldom long persistent. (3) There may be a diastolic murmur produced by stenosis of the tricuspid orifice. In my experience a diastolic murmur produced by stenosis of the tricuspid orifice is extremely rare ; very much more so than the lesion. (4) The typical diastolic murmur of mitral stenosis, having its maximum intensity at the apex, where there is very frequently a corresponding thrill to be felt. The localisation of this murmur, however, is much less well-defined than that of its fellow-murmur of mitral stenosis—the presystolic—and it is usually well heard between the lower part of the sternum and the apex-beat of the heart, and not very rarely it is heard to the left of the sternum as high as the third costal cartilage. With reference to the site of this murmur it is well to bear in mind the exact position of the mitral orifice in relation to the surface of the chest. "A line drawn across the sternum from the extremity of the third left cartilage in a nearly horizontal direction will represent the mitral orifice." I have called this murmur "typical," but it is not pathognomonic of the lesion. A similar—and, I believe, indistinguishable—murmur is rarely met with in simply dilated hearts without valve lesion of any kind. The diastolic murmur, therefore, has not as a sign of mitral stenosis the value of the presystolic murmur.

The case narrated furnished an example of a rare variety of the murmur last described (4), and it so happened that it furnished for a time also an example of "the murmur of high pressure in the pulmonary artery (2)." On October 31 "a diastolic murmur became audible to the left of the sternum in the second and third intercostal spaces, also over the left edge of the sternum at the same level." On January 19, 1896, this murmur had gone. On December 21, 1895, the murmur had been noted as "much less loud." Moreover, the patient at the same time reported "felt better." On the 27th of the same month the murmur was reported as "feeble." Evidently, then, the murmur gradually disappeared. Throughout the period of its existence the accompanying second sound was of great intensity, and I often let students feel the shock, corresponding to the closure of the semilunar valves, that can be felt in a proportion of cases of engorgement of the pulmonary circulation, the pulmonary orifice being the most superficial of all the orifices of the heart. In the note of January 24, 1896, it is recorded that "between the fifth and seventh ribs, close to the left border of the sternum, there is a double—to-and-fro—murmur (or friction sound) and the heart sounds are

inaudible." Moreover, it is added that "patient says she had pain in cardiac region last night." It is evident that the double murmur suggested friction sound, and this doubt with regard to the to-and-fro sound was not dispelled for some time. A second doubt arose as soon as the first disappeared—Was the diastolic portion of the to-and-fro sound the murmur of aortic incompetence? Up to my last note this doubt remained in my mind, and the reader will detect its influence in many of the preceding notes. The pulse was repeatedly recorded by the sphygmograph, but never afforded evidence in favour of aortic incompetence; it could never be regarded as in any sense a "Corrigan's pulse." At the same time it could not be said that the pulse was incompatible with aortic incompetence—all the more, seeing that there was mitral stenosis present. The possibility of the to-and-fro murmur being friction was soon dispelled, but to the end of the case I confess I was in doubt as the mitral or aortic origin of the diastolic murmur, and with such doubt in my mind I attended the post-mortem examination of the body. Before the advent of the to-and-fro murmur (January 24, 1896) the case had been regarded as an ordinary one of mitral stenosis. When the mitral origin of the murmur was proved, I remembered a case with similar to-and-fro murmur I had witnessed when Resident Medical Officer in the Infirmary.

In the case which occasioned this note, while the murmurs simulated those of aortic incompetence, the other signs and symptoms pointed strongly to mitral disease, especially the pulse and the aspect of the patient. I have elsewhere related my experience of diastolic murmur in cases of simply dilated hearts without any valve disease, and in this journal I closed my remarks on the statistics of 60 cases of mitral stenosis with a confession of ignorance in regard to the causation of certain diastolic murmurs met with in the disease. The presence of such a murmur at the base of the heart, and even up to the top of the sternum, is very puzzling when aortic incompetence can be excluded. In the statistics referred to, the frequency of occurrence of diastolic murmur "at the apex and above" the apex was shown to be considerable—66·6 per cent.

I am inclined to believe that the pause between the second sound and the commencement of the diastolic murmur constituted very valuable—it may, perhaps, be conclusive—evidence in favour of the mitral origin of the murmur. It is more difficult, theoretically, to conceive the murmur of aortic incompetence not running off directly from the second sound (when the latter is audible along with the murmur) than the diastolic murmur of mitral stenosis behaving in like manner.—*Medical Chronicle, December*, 1896.

34.—TRICUSPID STENOSIS.

By James B. Herrick, M.D., Chicago, Ill., Adjunct Professor of Medicine, Rush Medical College, &c.

[The author's three cases and abstracts of 40 others, &c., have been omitted.]

Antecedent rheumatism was found by Leudet in about 50 per cent. In the 154 cases, 51, that is 30 per cent., had rheumatism. This is more than 50 per cent. of the cases where rheumatism is referred to.

Pathological anatomy.—The tricuspid leaflets are commonly found adherent by their free borders. They may be more or less thickened. The neighbouring endocardium may show inflammatory change in the grayish, fibrous areas ; the chordæ tendineæ may be shortened, the papillary muscles deformed. The opening—linear, oval, or circular—is at the base of a cone made of the united cusps, and may admit three finger-tips, two, one, or less than one. Tricuspid stenosis is rare as an isolated valvular lesion. Naturally with the stenosis there is regurgitation at this orifice. Other valves are commonly involved.

The subjective symptoms are those common to valvular diseases. Dyspnœa may be extreme. Cyanosis is generally marked. Venous stasis with œdema may be pronounced. The pulse, from small supply of blood to the systemic side of the heart, is small, the pulmonic tone commonly feeble. Venous pulse, presystolic in character, is generally seen, often with a positive systolic pulse from concomitant insufficiency. Percussion reveals an enlarged right heart and commonly left also, from mitral or aortic disease. In one case the high point (second space) at which dulness began to the right of the sternum, would be suggestive of right auricular enlargement. Thrills are at times present. The murmur is diastolic, heard best over the tricuspid area, and is particularly diagnostic when clearest over the right fifth and sixth cartilages (Grawitz). The murmur is frequently inaudible. Frequently, too, the presence of other murmurs, or of adventitious pulmonary and bronchial sounds, serves to drown the murmur of this lesion ; or tachycardia and arrhythmia make its analysis impossible. That there is no uniformity in the character, intensity, quality, or even presence of the murmur is shown by the diverse testimony of competent observers.

To judge from the clinical histories of the cases reported, one may conclude that tricuspid stenosis can be suspected when the patient is a female; has had rheumatism; has a history of dyspnœa, palpitation, œdema, often with remissions and exacerbations; is cyanotic; has rapid, arrhythmic, feeble pulse;

has mitral stenosis with enlarged right heart, particularly if auricular enlargement can be made out. Especial value attaches to persistent cyanosis. If, in addition to this, there is a presystolic or diastolic murmur, heard best over the ensiform or over the right fifth and sixth cartilages, and particularly if this murmur differs in intensity, quality, or pitch from the mitral diastolic, or if there is an area between the mitral and tricuspid areas where no murmur is audible, the diagnosis becomes reasonably certain. Theoretically, enlarged right heart, feeble pulmonic second sound, diastolic murmur over the tricuspid area, loud right-heart tones, marked cyanosis and weak pulse would be expected in tricuspid stenosis. Its combination with other valvular lesions makes its recognition extremely difficult in practice. One does well if he suspects it. Probably the most certain sign is the diastolic murmur over the xiphoid differing in quality from that heard over the mitral area. But this is inconstant. Colbeck adds that a short, sharp, and loud right-heart first sound not obscured by a systolic murmur that may be present, points toward tricuspid stenosis.

While the prognosis is in general bad, the fact that patients may live for years, even to the age of 64, should be remembered. We commonly, too, hear auricular compensation spoken of as purely theoretical. A glance at the greatly thickened wall of the right auricle in the specimen from my own case, with the massive *musculi pectinati*, will convince one that the auricular hypertrophy, in this case at least, must have rendered the right auricle, for a time, competent. The prognosis must be determined by the complexus of symptoms, the general condition of the patient, the nature of the occupation, &c. The relief to, or the prevention of, pulmonary congestion offered by tricuspid stenosis ought, perhaps, to be taken into account as explaining the ripe age attained by some of these patients. The treatment would be governed by the same rules that govern the treatment of cardiac valvular disease.—*Boston Medical and Surgical Journal, March* 18, 1897.

35.—SOME FORMS OF NON-VALVULAR HEART DISEASE.

By H. Handford, M.D. Ed., M.R.C.P. Lond.,
Physician to the General Hospital, Nottingham.

[The following is taken from Dr. Handford's paper. The cases are omitted :]

Although diagnosis in heart affections has improved very greatly of recent years, it still remains in many instances a matter of extreme difficulty and complexity to ascertain

during life the exact condition of the organ, and especially is this true in the case of non-valvular lesions. Moreover, there is this further reason for claiming special attention and study for non-valvular lesions, viz., they are apt to arise insidiously in persons apparently in robust health. The symptoms are at first not obtrusive, and yet the prognosis is in many cases very grave. The range of non-valvular heart disease is very extensive, and, owing to better diagnostic methods, is widening every year. If it may be taken to include all cases where there is no structural change in the valves, it will comprise most anæmic and many rheumatic heart affections, particularly in their early stages. But I propose to confine myself to two varieties, namely, those due to alcohol, and those brought on by over-exertion.

Acute alcoholic dilatation of the heart is a most definite, important, and striking affection. In the first case the only marked pathological condition was a decided dilatation and enlargement of the heart. The second case was one of dilatation of the heart, with degeneration of the muscular walls from chronic beer drinking. This case illustrates three at least of the ways in which alcohol leads to heart failure. In the first place, excessive beer drinking, by the mere bulk of the fluid consumed, keeps the small vessels full, and raises the blood tension. The heart, by its contractions, has to keep a larger mass of fluid circulating against a resistance which is increased on account of the contraction of the minute arteries. The mass of fluid that is passed through the blood in twenty-four hours, especially by men living in some of the German towns, such as Munich, is enormous, reaching sometimes ten to fifteen quarts, or even much more. In the second place, the irritating effects of the alcohol and other constituents of beer upon the coats of the small arteries cause muscular contraction, thickening, and the gradual production of arterio-sclerosis. In this way the resistance against which the heart has to work is still further raised, and dilatation with hypertrophy results. And in the third place, the prejudicial effects of alcohol upon the nutrition of the heart muscle, the fatty degeneration of the muscular fibres which it favours, and the fatty overloading with which its abuse is generally accompanied, hasten the process of dilatation and general heart failure. So definite, indeed, are the results of this excessive beer drinking upon the heart in Germany, that *Bier-herz* is a recognised pathological condition in Munich, and other great centres of the consumption of the stronger German beers. But dilatation of the heart also results not uncommonly from over-exertion. The dilatation and heart failure may be acute, resulting from any violent effort or strain. In minor degrees this is very common, especially from bicycling; less frequent from Alpine climbing, football, or rowing. In its more

severe forms it is rare. Very severe cases are, fortunately, rare; but minor degrees are very common. The two cases detailed here are of interest, because they occurred in typically healthy men, and from a cause which is very common just now—namely, want of discretion in bicycling. I feel satisfied that in neither case of these was there any valvular disease. It is evident that a heart so dilated is capable of returning to approximately its natural size; but it is equally clear that recovery is very slow and gradual, and that the heart usually remains less capable of sustained exertion than before. How far the præcordial pain is due to stretching of the ventricular walls, and how far to some interference with the nervous apparatus, I cannot say. In both these cases the connection of cause and effect was quite apparent, and the symptoms were supported by definite physical signs in the shape of a murmur. But that minor degrees are very common, I feel satisfied; and the symptoms are often misinterpreted because of the absence of a murmur. Long-continued over-exertion, on the contrary, causes heart failure in quite another way, namely, through the arterial system. The first effect of considerable exertion continued for months or years is hypertrophy of the heart; but this is a normal condition and need not pass the bounds of health, even though the hypertrophy be great. It is very doubtful whether even considerable hypertrophy so acquired, and continued for several years, necessarily involves any degradation of tissue (that is, any replacement of muscular by fibrous tissue), unless associated with arterial degeneration. But excessive exertion, with insufficient periods of rest continued for years, involves as the chief evidence of wear and tear degeneration of the arteries, both large and small. This, again, reacts upon the heart in three quite distinct ways.

In the first place atheroma of the large vessels, and especially of the aorta, by the loss of elasticity it produces and by other means, causes much extra work to the heart, leading first to hypertrophy, and eventually to dilatation and death. This forms one variety of aortic disease which at first is unaccompanied by valvular lesion, but ends with aortic regurgitation. In the second place degeneration of the small arteries, arteriosclerosis, acts like a stop valve upon the peripheral part of the circulation; raises the resistance against which the heart has to work, and leads first to hypertrophy, and finally to dilatation and death, without any valvular disease at all. And, lastly, the nutrient arteries of the heart muscle share in the degenerative process, become thickened, fail to supply the heart adequately with blood; and in consequence the muscular fibres are replaced by a lower form of tissue, namely fibrous tissue. The "fibroid heart" is the result; the walls lose more and more their

contractile power ; dilatation and death eventually ensue. But, instead of acting separately, all these processes are usually combined in varying proportions, and unite in hastening the common end.—*Medical Press and Circular, March* 24, 1897.

36.—TREATMENT OF CHRONIC CARDIAC DISEASE.

By Beverley Robinson, M.D., New York.

[The following is taken from Dr. Beverley Robinson's paper :]

We all admit the advantage accruing to patients affected with chronic heart disorder, even when compensation is impaired, of keeping the skin in good condition. Hence baths are serviceable, provided the temperature is not too elevated and they are of short duration and not given too often. The stimulating baths, therefore, of Nauheim, with their large percentage of carbonic acid, and of the chlorides of sodium and calcium, are of undoubted efficacy. Given alternately at the same time with " resistance gymnastics," they show wonderful results. In hypertrophous dilatation, when the heart had been accurately determined as to its size by methods of physical exploration, and notably auscultatory percussion, previous to the Schott treatment, subsequent measurement showed positive and considerable diminution in size. This decrease was not always lasting—at least in the beginning—to its full extent ; still the permanent decrease in size after a more or less prolonged treatment was often unmistakable. With it came a stronger, more regular heart action, and a fuller, vigorous pulse, as well as a disappearance of many threatening symptoms. The Oertel system seems to be especially adapted to those who previously have eaten or drunk to excess, and who also have fatty overgrowth thus brought about. As a rule, it should only be employed with those who have had sufficient strength to go through with the Schott treatment advantageously, not to speak of the still milder one of Linn, with kneading and passive movements.

In Oertel's system the graduated exercises consist in walking up hills of slight or more considerable elevations, and for a shorter or longer distance, depending upon the patient's strength and ability to compass them without undue fatigue. According to Oertel's statements and those of others, the heart thus rapidly acquires an increased degree of strength. In both systems—those of Schott and Oertel—the result is to bring more blood to the heart muscle, and thus promote its healthy nutrition. In either of these treatments it is obvious that the most intelligent supervision of the patient should be constantly

brought to bear, and only thoroughly trained competent manipulators employed. Again, it is also essential that an accurate diagnosis of the case should be previously made. I am perfectly confident myself that whenever there is any inflammatory action going on, no matter how insidious it may be, such exercises can only be productive of harm to the patient.

In those cases in which degenerative processes of the heart muscle are present, as when there is reason to believe that thrombosis of the coronary arteries exists, the greatest care and circumspection should be had in order to avoid positive injury. It is desirable, however, that close study and observation of Schott's treatment particularly (as it seems one better adapted to a large number of cases of heart failure) be instituted among us, that we may be able to give the benefit of it in its most important features to very many sufferers who are wholly unable for major reasons to go to Bad Nauheim. Be it here said that Schott himself—all to his honour—has wisely insisted that there was nothing so special in his treatment that it could not be carried out wisely elsewhere. While we should be prepared, in view of excellent clinical reports from prominent physicians, to accept the benefits of the Schott treatment for certain well-defined cases, we should not yet be willing to adopt it, as apparently some are inclined to do, as the ordinary treatment of chronic cardiac disease. Whenever there is marked degeneration of the vascular supply of the heart or of the myocardium, we should interdict this treatment as possibly leading to disastrous results, in extreme conditions even to heart rupture itself. Chronic interstitial nephritis, however, does not apparently contra-indicate its careful employment. The presence of an aneurism, on the other hand, undoubtedly would. We have learned obviously from the favourable reports of this treatment that have come to us, that there are numerous cases in which there may be much benefit derived from properly resisted movements and the diversion of a large amount of blood into the capillaries of the skin at a time when ordinary active exercise should still be interdicted. An overloaded, hyperdistended, unduly engorged right ventricle may thus be perhaps relieved of intraventricular pressure when blood-letting would be the only other alternative. This treatment, as has been said (Lauder Brunton), seems to occupy a somewhat intermediate position between massage treatment and that of Oertel in climbing mountains.

The question of proper diet for cases of cardiac disease is an important and difficult one to solve at times. Whenever cardiac insufficiency begins to show itself, the veins of the stomach are more or less engorged and the gastric fluids act less efficiently,

no doubt from changes produced in their quantity and composition. The result is that nausea frequently, and occasionally vomiting, result from the use of different alimentary substances. As a consequence we have to contend against an extreme distaste for food. Under these circumstances it is indicated to allow those things which are nutritious and yet most readily assimilated. Among these we would especially recommend predigested beef, or beef and bread ; peptonised milk, milk with Vichy or lime water ; kumyss, matzoon, egg albumen with water, whey, light broths of different kinds, meat jellies, curds, beef juice. The quantities of any one of these liquid or semi-solid foods given at a single meal should be small, but frequently repeated. Gradually, as the quantity of food is increased with each meal, the intervals between repasts may judiciously be lengthened. Later on, as the patient improves, a different dietary should be provided, and here we must use our knowledge of the patient's position, habits, and surroundings somewhat to control us. For the hospital patients, it is often wisdom not to limit them to light diet too closely, or to give them much either of farinaceous food or drink, such as tea or coffee.—*Medical Record, March* 13, 1897.

37.—ANEURISM OF THE ASCENDING PORTION OF THE AORTIC ARCH.

By James Stewart, M.D.,

Professor of Medicine, McGill University ; Physician to the Royal Victoria Hospital ; and

J. G. Adami, M.A., M.D.,

Professor of Pathology, McGill University ; Pathologist to the Royal Victoria Hospital.

[The following is taken from Drs. Stewart and Adami's paper. The observations on tracheal tugging are interesting :]

The patient, 49 years old at the time of his death, had drunk freely, contracted syphilis at 22, and gonorrhœa at 27. In July, 1893, after excessive mental work, he began to suffer from stabbing pains in the right and left breasts. In November, 1894, his condition was so bad that he entered the Royal Victoria Hospital, Montreal. Upon admission there was a prominence over the chest from the second to the seventh rib, highest over the centre of the sternum. On the left side there were two small tumours, just at the edge of the sternum between the second and third and the third and fourth ribs ;

the area was distinctly red with definite pulsation and heaving expansile impulse. The dulness present extended rather more to the right side, namely, half-inch to the left and two inches to the right of the sternum. There was a systolic murmur over the tumour, tracheal tugging was present, and the patient experienced some slight difficulty in swallowing.

The arteries were atheromatous and tension was higher on the right side. There were diminished breath sounds over the right lung with wheezing during deep inspiration. Upon December 1, 1894, the small pulsating tumours on the left side had united. Upon December 6 definite erosion through the sternum and through the third rib on the left side were made out. The patient continued in the hospital until May, when he was discharged, showing distinct improvement in his condition since January. The diagnosis then made was aneurism of the ascending arch.

In March, 1896, he was in the hospital again, for a few days, for examination, and then went home, returning on August 13. The right radial was rather stronger than the left. The transverse diameter of the tumour had increased from 4 to $5\frac{1}{2}$ inches. The skin over it was shining and glazed, there was a harsh blowing systolic murmur heard over the chest in front, faint at the apex. There was, as before, tracheal tugging, and the breath sounds on the right side were feeble. There was no difference between the pulses at the beginning of September. The tumour steadily enlarged, and upon the 8th the skin over the apex began to give way, there being one or two small cracks from which blood oozed in small quantities. On the next day the skin over the apex looked as though the aneurism might burst at any moment. The patient now was discharged at his desire. He was seen at home by Dr. Reilly every other day. He lived nearly four weeks after his discharge until October 5. Then taking his tea in bed, sitting up, the tumour suddenly burst, the blood pouring out of the upper portion of the prominence, and in a moment he was dead.

This aneurism was given off from the front of the ascending aorta, very slightly to the right; it was noticeable that the upper edge of the opening was 2·5 cm., or about an inch below the orifice of the innominate artery. Just beyond the upper edge of the mouth, the aorta measured 9·5 cm. in circumference, that is to say, that almost immediately beyond the sac the aorta was but little larger than normal. The sac was of great size from before, backwards; when emptied after removal it measured 8 cm. in depth. At the sternal attachment it was 11 cm. from above downwards, beginning 3 cm. below the upper border of the sternum; in breadth it was 9 cm. The outer walls of the sac were formed of the pleuræ on either

side and above, save in the middle line, where there was solid mediastinal tissue ; below the greatly expanded parietal pericardium formed the outer wall. The sac was filled with fairly loose clot, in the main not laminated. Even in the outer portion where this formed the thickest layer, it had a comparatively recent appearance, and was so deeply stained with pigment that lamination could not be recognised. Portions of the eroded sternal edges could be felt protruding into the sac on the right side ; on the left they were covered over. The main erosion or sternal orifice extended in the mid-sternal region from below the level of the third chondrocostal articulation to above the level of the fifth.

The points of more especial importance in connection with this case are :—(1) The position.—In general, aneurisms of the ascending arch are situated and expand mainly to the right. In this case, although the aneurismal sac began an inch and more above the valves, the rupture had occurred in the anterior wall, slightly, it is true, to the right, but very slightly, and the expansion had been in the median area of the chest, so that the erosion of the sternum was central. Indeed, there was an accessory but well-marked erosion on the left side in the region of the third left chondrocostal articulation. (2) The second point to be noticed is that in this case there had been from time to time a marked difference in the two radial pulses, which, with the other symptoms, might well have led to a diagnosis of aneurism originating much higher up the arch. It must be kept in mind that difference in the two radials is by no means diagnostic. In this case the regions of the innominate and the left subclavian were well outside the region of the aneurism, and the difference in the two pulses here must, as in other cases in which no aneurism is found to exist, be ascribed in the main to the arterio-sclerotic changes affecting the two trunks to a different extent. There is, however, another possibility in this case, namely, that the aneurism, adherent as it was to the chest-wall, did undoubtedly bring about malposition of the aorta, and this malposition may have so affected or distorted the orifice of either the innominate or the left subclavian as to impede the passage of blood and of the blood-wave down one or other vessel. (3) The third point of some value is brought out in connection with the sign of tracheal tugging. It is generally taught now-a-days that tracheal tugging affords a sure indication of aneurism of the transverse portion of the aorta, and, as I showed recently to the Society, in a case of aneurism of this nature, dilation of the transverse arch does undoubtedly lead easily to the production of this sign, and accomplishes this by pressing upon the lower end of the trachea and the left bronchus as this

passes underneath the arch. In the case before us there was no aneurism of the transverse arch ; and, further, there was no adhesion of the aneurism of the ascending portion to either trachea or brochus, and yet there was at least two years' history of distinct tracheal tugging obtainable. The motion of the larynx and trachea must have, it seems, been brought about by the downward pressure of the large aneurismal sac upon the lungs and smaller bronchi with each distension of the sac following upon the heart-beat. This case teaches us, therefore, to recognise that tracheal tugging may be a sign of aneurism of the ascending aorta as well as one of aneurism of the transverse arch. (4) As to the termination of this case.—External rupture is one of the more uncommon terminations of a thoracic aneurism. According to Chrisp's Tables this occurred six times in 136 cases of aneurism of the ascending arch which he found recorded..—*Montreal Medical Journal, November*, 1896.

DISEASES OF THE ORGANS OF RESPIRATION.

38.—COUGH DUE TO IRRITATION IN THE UPPER AIR-PASSAGES.

By Charles N. Cox, M.D., Brooklyn, N.Y.

[The following is taken from Dr. Cox's paper in the *Laryngoscope*, March, 1897 :]

I have no doubt that the majority of coughs have their origin at some point in or below the larynx ; but if we study our cases carefully, it will sometimes be found that the cause is some irritation in the respiratory passages further up.

Cough due to irritation in the nose.—It is possible for cough to be caused by irritation or pathological conditions in almost any part of the nasal cavity. In my experience, the two regions most frequently provocative of nasal cough are those including the posterior ends of the inferior turbinated bodies and the posterior end of the septum, and the inner surface of the middle turbinated bodies and that part of the septum lying opposite. I have, in a few instances, found cough as a pronounced accompaniment of hypertrophic rhinitis, when there seemed to be no particularly sensitive areas. Rather more frequently have I observed the same symptom in vaso-motor rhinitis and hyperæsthesia of the nasal mucous membrane

Spurs and deflections of the septum are quite frequent seats of sensitive areas which are productive of a cough. The posterior end of the septum is frequently the seat of either a unilateral or bilateral swelling of pale, sodden appearance. It is often productive of sufficient obstruction to interfere with nasal respiration. Cough is liable to be caused by this condition. To inflammation of this region, and also that of the posterior ends of the inferior turbinated bodies, is due, in my opinion, the tickling cough met with in the latter stages of acute coryza, when the cold is said to have "gone to the chest." Of course, we should not forget the fact that very frequently the coryza is followed by inflammation of the mucous membrane of the whole respiratory tract, and that in such cases the cough would more likely be induced by irritation of the larynx, trachea, bronchia, &c. The presence of nasal polypi is generally accepted as a frequent cause of asthma. The growths sometimes also induce cough without asthma.

Cough due to irritation in the naso-pharynx.—A cough may sometimes be due to some pathological condition in the naso-pharynx. This is not so frequently the case as it is with nasal irritation. The more common causes in this region are adenoids, and the accumulation of thick, tenacious mucus in chronic naso-pharyngeal catarrh. We are all familiar with the more or less virulent hawking and coughing of patients subject to the latter disease, particular in the morning.

Cough due to irritation in the pharynx.—In this region, we find again more frequent cause of cough. The dry, glazed mucous membrane of an atrophic pharyngitis is sometimes attended with the symptom. Rather more frequently, perhaps, a granular pharynx or a chronic follicular pharyngitis incites the reflex. Papillomata, springing from the soft palate, may give rise to cough. The growths themselves are not of very frequent occurrence, but when present are very prone to give rise to this symptom. An elongated uvula is such a well-known cause of cough, as to require nothing more than the merest mention.

Diagnosis.—Given a cough accompanying which there is no apparent pathological condition in the lower air-tract, how may we know that the cause lies in pharynx, naso-pharynx, or nose? If the cough were invariably attended with some peculiar characteristic by which it might be known, the task would be much lightened; but it is not so. To be sure, various characters have been ascribed to coughs, and we all recognise a dry cough, a moist cough, a hacking cough, &c. But none of these attributes can be claimed exclusively for such coughs as are due to irritation in the upper respiratory passages. In making a diagnosis, the whole pharyngo-nasal tract must be carefully examined, particularly those areas

which have been mentioned as the most frequent sources of pathological reflexes. If marked evidences of disease be present anywhere, and especially if contact with the probe produce or increase cough in a striking degree, the inference is fair that this locality may be the source of the cough, and then, by exclusion, if local anæsthesia of the suspected area, by a 4 or 5 per cent. solution of cocaine, hold the cough completely in abeyance, the evidence is conclusive beyond reasonable doubt, that the pathological condition of this locality is the initial of the reflex. Both of these tests may fail ; their failure, however, does not bar the possibility of nasal or pharyngeal causation. And if marked evidence of local disease be present, its treatment is justifiable, for it will be frequently followed by cessation of the cough.

Treatment.—In the treatment of these cases, there are two factors to be borne in mind : First, a local irritation ; second, a neurosis, in which there is lack of control of the efferent impulses originating in the sympathetic nerve-centres, these latter having been teased into exaggerated activity by continued impressions of peripheral irritation. In a very considerable proportion of cases, the local irritation is the prime factor, and local treatment alone will effect a cure. The limits of this paper will not permit a detailed description of the various means, medical and surgical, for removing the pathological conditions which have been described as the frequent cause of cough. The minutiæ of such treatment are fully described in the comprehensive laryngological and rhinological text-books of the day. Peripheral irritation having been abolished, and the nerve-centres allowed to rest, nerve control is restored and abnormal reflexes vanish. But if the irritation has been too long continued, or if preverted nerve-action is due to inherited or acquired disease, local treatment alone will not avail. It will then be necessary to institute such constitutional treatment as will restore tone to the nerve-centres, and inhibit their excessive action. Indeed, it may be necessary at times, even where local irritation is the prime factor, to temporarily suspend the excessive activity of these centres by sedatives, such as opium, morphia, codeia, &c., until the peripheral irritation can be removed ; although this, as a routine measure, is to be deprecated. Any existing diatheses should receive attention. Digestion and alimentation should be the subject of the most careful consideration. The drugs which have proved the most efficacious, in my hands, in restoring normal tone to the nervous system, are phosphide of zinc, iron, quinine, and strychnia ; each being administered alone, or in combination with one or more of the others, according to the indications of the individual case.

39.—THE TREATMENT OF BRONCHIAL ASTHMA.

By Frederick I. Knight, M.D.

In a certain number of cases the onset and termination of the attack are both so sudden and so free from catarrhal products as to indicate that it is purely spasmodic; on the other hand, in a much larger number of cases the preliminary cough and subsequent expectoration of Curschmann's spirals from the bronchioles indicate an obstructive affection of the bronchial mucous membrane. The principal conditions, which either alone or in combination, may be concerned in an attack of asthma are:—(1) Disease of the lungs or bronchi; (2) pressure on or hyperæsthesia of the vagus nerve; (3) direct irritation of the bronchial mucous membrane; (4) some peripheral morbid condition acting by reflex on the bronchi; (5) toxæmia. The treatment of the paroxysm, however, is often what first demands our attention. We will consider this first, and afterwards the treatment in the interval between the attacks, including the radical treatment of the under-lying cause, when that is possible.

The first thing which demands brief consideration, when called to a patient in a paroxysm, is whether it may be possible to remove at once one of the factors, and thus perhaps put an end to the attacks. If the patient has had attacks before he has probably learned to avoid direct irritants, like dust, odours, &c., which are most evident, so that it is not worth while to spend much time during a paroxysm in hunting for these; but some peripheral source of irritation by reflex may be seen at once, as, for example, a nasal polyp or an overloaded stomach, the relief of which will end the attack for the time being. So carbonic acid poisoning may be relieved by exercise of the lungs in fresh air. The efficient remedies in the attack are those which reduce the irritability of the nervous system, relax spasm, thin the mucous secretion, and even produce a kind of bronchorrhea. It is important to use, unless absolutely necessary, only such remedies as may not incapacitate the patient for the next day's duties, and such as will not be likely to inaugurate the drug habit. If there is evidence of an underlying condition of bronchitis, it is well to put the patient on the internal use of potassium iodide at once. The simplest remedies, and those attended with the quickest relief, if relief comes at all from them, are those which are taken by inhalation. They all of them act more or less by exciting secretions, and most of them by relaxing spasm also. Some act well in one case and some in another; and those remedies which have most success are usually combinations of various drugs. Nitrate of potassium, stramonium, belladonna, hyoscyamus, and

arsenic are found in variable numbers and proportion in most of the powders and cigarettes in the market. One drug or one combination affects one, and another, another; and only trial will decide which is best for any particular case. If no relief comes from such inhalations then the milder internal remedies may be tried. Phenacetin and other remedies of its class may give relief. Strong coffee or hot alcoholic drinks may suffice. If necessary, we proceed to less simple measures, such as the inhalation of ethyl iodide, or the amyl nitrite, or the internal use of nitroglycerine. The latter drug is very efficient in the relief both of spasm and of hyperæmia. A large proportion of cases recover quickly on the combined use of potassium iodide and nitroglycerine. Unfortunately the system soon becomes very tolerant of the latter and the doses have to be constantly increased. If still more powerful measures are called for, the hypodermic injection of morphia and atropia is one of the best and will usually give relief, though I have seen a case which always resisted morphia, yield readily to the inhalation of chloroform. The use of chloral, which often gives speedy relief, is to be avoided, if possible, on account of the very depressing after-effects. I must utter again a warning note against the use of any but the simpler remedies for the paroxysm unless absolutely required.

We now come to the treatment of patients in the intervals, to the treatment of the underlying conditions which, singly or combined, cause the attacks. The first factor to which I have directed attention is the condition of the lungs and bronchi. In some we have physical evidence of a chronic bronchitis. It is in the cases with chronic bronchitis that the potassium iodide gives so much relief, either as an absorbent or as an alkali, increasing and thinning the bronchial secretion. In case of derangement of the stomach, I have found the sodium iodide and strontium iodide better borne. I have lately used the latter a good deal and find that it is much more acceptable to the patient. All of the iodides should be given largely diluted on an empty stomach. I usually give them ten or fifteen minutes before meals. The continued use of a vasometer depressant, such as one of the nitrites, either alone or with an iodide, when that is indicated, is of great benefit. Nitroglycerine may be used, but the nitrite of sodium has a more lasting effect. The dose of this drug given in many books is too large, one or two grains being usually enough, and large doses dangerous. In case of emphysema strychnia is useful—also expiration into rarefied air.

The removal of the direct irritant is possible in many cases and efficacious in preventing the paroxysms, though hyperæsthesia of the nervous system may be a prominent symptom.

Feather beds, animals, kerosene lamps, arsenical wall-paper, various kinds of dust, and many other objects, when found to be excitants, may be easily removed; but others cannot be, and yet it may be possible to remove the patient from them, as in the asthma of autumnal catarrh or other less defined climatic or atmospheric conditions. Certain regions of this country are known to be exempt from all of the symptoms of autumnal catarrh, asthma included. In other cases the atmospheric condition which provokes the attack is not so well defined, and relief may be obtained only after repeated changes. The slightest change in location will sometimes give relief. More patients get relief by going from the country to the city than from the city to the country. A curious feature of the immunity of location is that in time it often fails and another change is necessary.

Of peripheral origin of reflex irritation the nasal region furnishes a good many cases, so many that the digestive and other important regions have recently been too little investigated. The nasal polyp is easily recognised, and so usually are other morbid conditions which are likely to set up reflex action. Contact of a turbinate bone with the septum may be a source of great irritation, less frequently chronic disease of the turbinates, tonsils, pharyngeal-adenoid, &c. The whole naso-pharynx must be put in as healthy a condition as possible. As I have just stated, digestive derangements have been in recent years far too little considered. Indigestible food, especially when taken at night, is often the cause of an attack; though other factors may be present, it is this added irritation which determines the paroxysm. The digestive tract is so much under our control that it is very important to regulate the quality and quantity of food and time of meals, and perhaps also to treat some evident morbid condition. The intestinal tract must be investigated, especially for parasites. The sexual system and possible trauma must be considered. No study of an obstinate case is complete without the consideration of toxæmia. Lead and arsenic should be sought, and especially should the lithemic condition be looked for. An anti-lithic diet, regimen, and medicine will relieve many otherwise incurable cases.—From Dr. Knight's paper in the *Boston Medical and Surgical Journal*, *March* 25, 1897.

40.—SINUS-PLEURITIS.

[The following is taken from a leader in the *Medical Record*, January 30, 1897:]

For a number of cases in which inflammation of the pleura pursues an insidious and latent course, as well as for another

number in which apparently inexplicable fever exists, an explanation is offered by the account given by Koll (*Deutsches Archiv für klinische Medicin*, B. lvii, H. 5, 6, p. 597) of a group of upwards of 30 cases observed in the medical clinic of the Julius Hospital at Würzburg and which he characterises by the designation sinus-pleuritis. The symptoms of the affection are suggestive of some disorder of the heart or stomach, so that its true nature may escape detection unless it be specially looked for. The lesion of the disease consists in an inflammation of the lowermost portion of the pleura anteriorly and laterally, and sometimes posteriorly, unattended with demonstrable effusion. In the large majority of cases the disease sets in suddenly, like an infectious disease, with usually slight fever and other symptoms of constitutional disturbance, generally without appreciable cause. Only in a small number was a previous history of exposure to cold or of excessive physical effort, and the like, ascertainable. In isolated cases a relation appeared to exist between the attack and acute and muscular rheumatism. The disorder did not follow other affections predisposing to inflammatory complications of the serous membranes (diabetes, nephritis). In individual cases the onset was not acute, so that definite information as to the beginning of the attack could not be obtained. In one case it was related that the patient had had a similar attack some five years before. The subjective manifestations in most cases pointed to acute or chronic gastric disease, the most conspicuous symptom consisting in diffuse or circumscribed tenderness in the gastric region, setting in suddenly during a state of health. A point directly below the apex of the ensiform cartilage was noted as painful with especial frequency. In about half the cases the pain was induced, or when already present, was increased by the ingestion of food, and almost always by pressure. Some patients further volunteered the information that forced inspiration was particularly painful. In a considerable proportion of the cases there was also frequent eructation and vomiting. One patient, in fact the first in whom the disease was recognised, presented symptoms of gastric ulceration, and she was accordingly nourished with food administered through a tube for a period of four or five days. In most cases the gastric symptoms disappeared in the course of several days almost completely. Almost all the patients complained of pain behind and on either side of the sternum, radiating thence in the course of the inferior margin of the lungs. These pains, which were of burning character, were usually increased by deep inspiration, physical effort and inclination of the body forward. Some patients complained of palpitation of the heart, and in some the frequency of the pulse was found to be increased (to 140)

without, however, physical evidence of cardiac disease. One patient suffered for eight or ten days from severe dysphagia.

In most cases the constitutional symptoms were mild—headache, fatigue, general malaise, impairment of appetite. In several the attack set in with a chill. Usually there was slight continued fever (101·5°). As a rule the temperature declined on the second or third day. Then there was slight irregular elevation of temperature, usually in the evening, in some cases continuing for weeks and months. In all cases there was found constantly a soft, fine, rhythmic friction-sound corresponding and restricted in distribution to the pleural sinus in the region of the heart, and along the lower lateral borders of the lungs. It was most marked at the left border of the sternum on a level with the fourth and fifth ribs and was noted with especial constancy somewhat within and generally below the apex-beat of the heart at the level of the small bridge formed by the tongue-shaped process of the upper lobe of the left lung between the pericardiaco-costal sinus and the phrenico-costal sinus. This sound could be heard faintly at mid-sternum at a point corresponding to the slight marginal sinus of the right lung, and from mid-sternum at the level of the sixth rib it radiated with increasing intensity along the lower sinus upon the right and left sides almost to the vertebral column ; or it ended gradually in the lateral portions of the reserve spaces. The sound was principally to be heard only during the second half, viz., at the height of a deep inspiration and at the beginning of expiration, and disappeared usually after protracted vigorous breathing, to return in the course of two or three hours. In a few cases the sound could be heard during the respiratory pause, isochronous with or following the action of the heart. The pleural character of this "precordial" sound was established by the fact that it was heard only over the pericardiaco-costal sinus and never over any portion of the anterior surface of the pericardium not covered by pleura. That it is not physiologic and dependent upon the movement on one another of healthy pleural surfaces was shown by comparative observation. In patients in whom spontaneous pain or pain induced by pressure below the apex of the ensiform cartilage was present, a distant friction-sound was audible. This might have been due to inflammation of the diaphragmatic pleura or of adjacent peritoneum.

Of complications there was noted in two patients, in conjunction with acute exacerbations, acute intestinal catarrh. In a case consequent upon acute rheumatism mitral endocarditis was observed. Another case also presented acute endocarditis. The disorder was characterised by its obstinacy of course and its tendency to relapse. Even in cases in which the objective

manifestations were mild from the outset the friction-sound was most persistent. In general, aggravation and improvement alternated, little influenced by medication. The most marked of the subjected disturbances subsided after eight or ten days' rest in bed, while the objective phenomena underwent but little change. Salicylates, phenacetin, and the like appeared to exert no influence. Calomel in doses of 2½ grains three times a day seemed to do good in some cases, as did also hot poultices. In only about a quarter of the cases was recovery complete on dismissal from the hospital. The remainder, while in general free from subjective discomfort, except perhaps pain on deep inspiration or a sense of pressure or burning in the affected region, still presented objective manifestations. When the attack proper was over the patients displayed a tendency to lack for a long time the feeling of perfect health. The condition is to be differentiated from acute or chronic gastric catarrh, gastric ulceration, pericardial disorders, intercostal neuralgia and, in the absence of fever, from simulation.

41.—ON CERTAIN FEATURES IN THE PROGNOSIS OF PNEUMONIA.

By William Osler, M.D.,
Professor of Medicine, Johns Hopkins University, Baltimore.

[The following is taken from Dr. Osler's paper :]

The higher the mortality the more difficult is it to estimate in any disease the value of the various elements of prognosis. Pneumonia is certainly the most fatal of the acute infections of adults in temperate climates. No other disease kills from one-fourth to one-third of all persons attacked. Among the circumstances influencing the prognosis some are general, as age, race, and habits; others special, as the degree of involvement of the lung, the fever, complications, &c. Age is a very important factor. As Sturges remarks, the old are likely to die, the young to recover. So fatal is it that to die of pneumonia in this country is said to be the natural end of elderly people. The disease appears to be much more fatal in the negro than in the white. Previous habits of life and the condition of bodily health at the time of the attack form the most important factors in the prognosis of pneumonia. In analysing a series of fatal cases one is very much impressed with the number of cases in which the organs show signs of degeneration. In 25 of my 100 autopsies at the Montreal General Hospital, the kidneys showed extensive interstitial changes. Individuals debilitated

from sickness or poor food, hard drinkers, and that large class of hospital patients composed of robust-looking labourers between the ages of 45 and 60, whose organs show signs of wear and tear, and who have by excesses in alcohol weakened the reserve power, fall an easy prey to the disease. Very few fatal cases occur in robust, healthy adults.

Apart from certain complications, the fatal event in pneumonia may result from a gradual toxæmia, or from mechanical interference with the respiration and circulation. The toxæmia is the important element in the disorder, to which, in the majority of cases, the degree of pyrexia and the consolidation are entirely subsidiary. The poisonous features may develop early and cause from the outset severe cerebral symptoms, and they are not necessarily proportionate to the degree of lung involved. There may be severe and fatal toxæmia, with consolidation of only one-half a lobe, while a patient with complete solidification of one lobe or of a whole lung may from beginning to close of the attack have no delirium. Many of the cases which show the most profound toxæmia present variations from the typical picture; thus there may be no cough, no expectoration, very slight fever, and no leucocytosis. Thus in two cases the clinical features were rather those of a profound intoxication than of any local disorder. These severer types are seen particularly in the epidemic form and in old people, and the toxæmia may be out of all proportion to the local disease.

Probably, too, the sudden and unexpected death in pneumonia may be attributed to the action of the specific toxins on the heart-centres, rather than on the muscular substance of the organ itself. This seems more reasonable than the former idea that it was the action of the high fever upon the myocardium. These cases are by no means uncommon, and one has always to be on the look-out. I have notes of three cases which I have seen within the past few years. In the first, massive pneumonia with great obscuration of the physical signs, owing to blocking of the bronchial tubes, death occurred quite unexpectedly on the sixth day; in the second, death occurred suddenly on the fourth day; and in the third case the patient died in collapse on the third day. Quite serious collapse-symptoms may occur early in the disease, even within 24 hours. In one of the most striking cases I have seen the patient had three attacks of cardiac syncope, the last of which proved fatal on the third day of the disease.

Mechanical interference with respiration or circulation is a very much less frequent cause of death. The interference may be the gradual exclusion of the air, by the filling up of the follicles, or the capillaries in extensive territories may be compressed. These factors occur together, and the depressing

element of great loss of blood-serum, upon which Bollinger lays stress, must also be taken into account. Very large areas of the breathing-surface may be cut off without seriously disturbing the cardio-respiratory mechanism. In no way is this more strikingly shown than by the condition of the patient after the crisis. This shows that the fever and the toxins rather than the solid exudate are the essential agents in causing the cardio-respiratory symptoms. Of course there are cases in which the exit of air is gradually and effectually shut off by progressive consolidation until ultimately a point is reached in which the patient is simply smothered, and literally dies from want of breath. It is difficult to say how much breathing-area is needed to maintain life. That a man can get along with very little, if the removal takes place gradually, is shown by cases of progressive tuberculosis of the lungs. In pneumonia recovery is not infrequently seen after consolidation of one lung; rarely after consolidation of one lung with one lobe of the other. One occasionally meets with cases in which both lungs are almost completely solidified. In these cases the dyspnœa is usually urgent and distressing and the cyanosis early and pronounced; while the cerebral features of the disease may be completely absent. But even here we must be on our guard against a too mechanical conception of the process. While theoretically we may suppose great obstruction to the pulmonary circulation to exist in consequence of the compression of the alveolar capillaries by the exudate, it has been shown by the well-known experiments of Welch that it is exceedingly difficult to raise the blood-pressure in the pulmonary artery by cutting off territories of the circulation in reality much more extensive than are ever involved in pneumonia.

As I have already mentioned, in speaking of the remarkable phenomena associated with the crisis, additional factors must be considered, namely, the weakening influence of the fever on the heart-muscle and the depressing effect of the toxins on the cardio-respiratory centres. This explains in part, too, why we do not get such satisfactory results from venesection in pneumonia as in similar conditions of dilatation of the heart with cyanosis, in emphysema, arterio-sclerosis, and valvular disease. While it is rare in the one to see even copious venesection followed by relief, in the others the good effects are often most striking. The toxæmia outweighs all other elements in the prognosis of pneumonia; to it (in a gradual failure of strength or more rarely in a sudden death) is due in great part the terrible mortality from this common disease, and unhappily against it we have as yet no reliable measures at our disposal.—*American Journal of Medical Science, January*, 1897.

42.—PNEUMONIA IN CHILDREN.

By J. P. Crozer Griffith, M.D.,
Clinical Professor of Diseases of Children in the University of Pennsylvania.

[The following remarks on treatment are taken from Dr. Griffith's paper :]

In considering treatment we must first attend to prophylaxis. The great danger of bronchitis in infants is its tendency to run into bronchopneumonia, and even croupous pneumonia not infrequently follows a few days of bronchitis. Consequently, every child must be carefully guarded against taking cold, and be most carefully treated if bronchitis is already present. Regarding the treatment of an attack of pneumonia, I may first speak of the use of applications to the chest. The cotton jacket has not, in my opinion, any of the great value which is attributed to it by so many practitioners. I have treated children with it and without it, and I have never been able to see that those without it were any worse off. Here I may say, however, that we, as physicians, should hold in check the strange desire so many mothers have, to burden a feverish child with a vast quantity of bed-covers. What I have said with regard to the cotton jacket applies in some respects to the use of the jacket-poultice. I would strongly protest against its routine employment. I have seen the application and frequent renewal of a light, hot jacket-poultice give the greatest relief in the intense dyspnœa which is particularly apt to accompany bronchopneumonia. The use of ice or of ice-water compresses on the chest is a valuable procedure where there is much pain, particularly if the fever is high, since it acts as an antipyretic as well.

Whether or not high temperature is to be treated depends altogether upon the individual case. If convulsions are threatening, or actually going on, and we have reason to believe that they are due to hyperpyrexia, no time should be lost, and the temperature should be lowered at once. So also if a child is restless and uncomfortable, as a result of high fever, the temperature should be reduced. Again, if the temperature in bronchopneumonia is persistently high, and we have reason to fear the action upon the tissues of such continued elevation, it is proper to take measures to alter the condition. But to treat fever simply because it is fever, is, I think, a mistaken policy. In my experience children bear antipyretics, as a rule, remarkably well ; better than adults do. As a rule, however, I think that hydrotherapeutic measures are to be

preferred. Sponging is of great service, and the tepid tub-bath is invaluable for reducing fever and allaying nervousness in children. It will act efficiently, when water of the same temperature would have failed in adults. Where this does not succeed we should not hesitate to proceed to the use of the cold tub-bath, exactly as in typhoid fever. It is a mistaken idea that the cold bath must not be used because we are dealing with an inflammatory disease of the chest. I have repeatedly used the cold bath, both in adults and children suffering with pneumonia, and never with bad results. Here again, the nervous symptoms are more a guide for its use than is the mere elevation of temperature. In this connection I may speak of the hot bath; not used for any action upon temperature, but for its surprising influence upon the general state, and especially on the dyspnœa. In the case of children, especially infants, who are extremely dyspnœtic, cyanosed, pallid, and apparently nearing death, a plunge into a hot bath of 105° or 110° often causes a vigorous reaction with renewed respiratory power. The child should be kept in the bath from three to at the most five minutes, and then wrapped in blankets.

There is no one line of treatment which can be followed out in every case. In some instances aconite seems to be of distinct value, especially early in the disease; yet it is a medicine which must be used with care. I have thought that I got good results from aconite, especially in children. Digitalis is certainly of service in many cases, yet caution must be observed not to drive the heart too much. Alcohol is a stand-by whenever we fear failure of the vital powers. Strychnine is useful for the same purpose, and as a respiratory stimulant as well, and may be given in large doses to children in suitable cases. There prevails, to some extent, an ill-founded fear of opium. It is a drug of extreme value in many instances, yet one which must be used carefully, especially where the patient has any increasing tendency to apathy or mental dulness. Under such conditions, it is hardly safe to give it at all to children. Ammonium carbonate is a disagreeable drug, but one which seems to be useful in some instances. It is not now, however, viewed as the proper routine treatment, as it once was. I myself give it comparatively seldom. Ammonium chloride has seemed to me of service, particularly in bronchopneumonia, although some writers deny it any special value. In strong children, oppressed by a large secretion of mucus, an emetic of ipecacuanha often gives great relief, but it is only exceptionally that it is indicated. The use of vapour, especially under a tent of blankets, is sometimes of much service, when dyspnœa is urgent. The value of inhalations of oxygen for cyanosis is never to be forgotten.—*Medical News, December* 5, 1896.

43.—THE TREATMENT OF PHTHISIS BY GUAIACOLATE OF PIPERIDINE.

By Arnold Chaplin, M.D., M.R.C.P., Assistant Physician, City of London Hospital for Diseases of the Chest, Victoria Park, &c.; and
F. W. Tunnicliffe, M.D., M.R.C.P.

The success which has attended the treatment of phthisis by creasote and its derivatives, especially in the earlier stages, has led us to try a newly synthesised body, piperidine guaiacolate, which not only contains an antiseptic moiety, but also a constituent which possesses a nervine and vascular tonic action.

During the last three months an inquiry as to the value of piperidine guaiacolate in the treatment of pulmonary tuberculosis has been carried out at the City of London Hospital for Diseases of the Chest. The patients to whom the drug was given were subjected to close observation, and the effects of the medicine were from time to time noted. In all, 14 cases were placed under observation, of which 8 were out-patients and 6 in-patients. The duration of the observations varied, but as a general statement it may be said that six weeks was the average. In order to test efficiently the value of the drug, cases were chosen more or less haphazard, some being early cases in which improvement might be expected under appropriate treatment, others being more advanced, while yet others were in such a stage as to make it improbable that much good from any form of treatment would accrue. In all cases the dose to begin with was fixed at 5 gr. three times a day, and this was gradually increased until 20 gr., and in one case 25 gr., were given for a dose. So far as could be gathered from questioning patients and personal observation no unpleasant effects were noticed. All of them stated that the medicine had agreed with them. Pains were taken to ascertain if the drugs produced any gastric or intestinal irritation, but in no case could it be determined that the processes of digestion were in any way interfered with by the medicine. We think this worthy of special stress, because experience has so often taught us that when other derivatives of creasote, such as crude guaiacol, are given over a lengthened period, their use has to be discontinued from time to time, owing to the gastric and intestinal disturbances caused by them. But in these cases no such untoward event happened.

With regard to the varied symptoms of phthisis it is difficult to say with certainty that the guaiacolate of piperidine had any distinct effect upon them. For in all cases of phthisis it is so frequently found that improved hygienic conditions (good food,

rest and attention), such as residence in a hospital affords, play a large part in the restoration of the patient's health. This much may, however, be said that in many instances the cough appreciably improved while the treatment was in progress. The temperature was in no case affected adversely by the drug; in most cases it receded to normal. The appetite for the most part was maintained, and very often patients expressed the belief that the medicine improved it; indeed, in some cases it seemed that it had a markedly good effect upon the appetite. Some patients gained in weight while the treatment was going on, and in two instances it was thought that more flesh was put on than would have been the case had ordinary remedies been tried. The expectoration in most cases decreased while the drug was being taken. Among the out-patients especially there was a general improvement in strength and vitality. In the case of out-patients it must be remembered that improved hygienic conditions do not come into operation to the advantage of the patient as they do in in-patient practice.

Coming now to speak of the changes noted in the physical signs, it must be admitted that discussion of this subject is full of difficulty, for it so often happens that, although considerable improvement takes place in the general condition of the patient, yet no marked change occurs in the physical signs. Some of the cases (out-patients) whose condition was found to be improving were examined week by week to see if any change could be found in the physical signs. Consolidation and excavation were of course unaffected, but in not a few instances the lungs were noticed to become drier with less moist crepitant *râles*. This change was attributed to the fact that the area of simple inflammation around the tuberculous infiltration itself had passed from an active to a more quiescent condition. It must be admitted, however, that the same improvement in physical signs could not be seen in most of the cases under treatment as in-patients. Two out-patients considered that the medicine relieved their dyspnœa, and, to judge from the lung signs, which were under the treatment improving rapidly, it might very well be the case.

General conclusions.—In stating the effects of any new drug upon a given disease, the physician must always guard himself against "over enthusiasm," so often it happens that a new medicine has been reputed to be successful in some affection, and upon fuller trial its effects are found to be trifling, or even *nil*. Of piperidine guaiacolate it may be generally stated (1) that experience has shown that it is a perfectly safe drug in doses from 5 to 30 gr. three times a day; (2) that it causes no unpleasant effects; (3) that it is exceedingly well borne by the stomach, and in this respect it is equal to any other derivative

of creasote; (4) that patients while under its influence improved in appetite and general strength.—From Drs. Chaplin and Tunnicliffe's paper in the *British Medical Journal*, *January* 16, 1897.

44.—PROFESSOR KOCH'S NEW TUBERCULIN PREPARATIONS.

[The following is taken from a leader in the *British Medical Journal*, April 10, 1897 :]

It is now a little more than five years since Professor Koch, of Berlin, announced the discovery of a new treatment of tuberculosis, and the medical world was inspired with a hope that at length one of the most widespread and dreaded of diseases might be successfully combated. This hope was, unfortunately, destined soon to be destroyed, and tuberculin was very generally abandoned as an agent, if not positively harmful, at least incapable of effecting the good claimed for it. The reaction against it was probably excessive; and, indeed, from time to time, even down to the present day, series of cases have been put on record in which the remedy, judiciously used, has been shown to produce considerable amelioration. Dr. Koch, indeed, in a recent paper, still expresses the opinion that, apart from his newer preparations, tuberculin is still the best remedy available against tuberculosis. Undoubtedly it has obtained for itself a permanent position in veterinary practice as a means of recognising concealed tuberculosis. Dr. Koch lays much stress on the fact that all bacteriological treatment must rest upon immunity, and in the particular question of tuberculosis the difficulty of inducing immunity constitutes the crux of the problem of successful bacteriological treatment. Treatment by tuberculin differs from serumtherapy, where immunity is conferred on man by the injection of serum of a highly artificially immunised animal, the patient escaping the risks attendant upon the actual development of immunisation in his own body.

Dr. Koch and his assistants have incessantly laboured to improve tuberculin. The new preparations consist of tuberculins A, O, and R, the last-named being the one actually recommended for clinical use. Tuberculin A, obtained by extraction from tubercle bacilli by means of one-tenth normal soda solution, acts much in the same way as ordinary tuberculin, but the reaction is more intense and the patient takes more time to become accustomed to or immunised against its action. Tuberculin O and R are prepared by vigorously pounding in a mortar dried cultures of the tubercle bacillus, and then adding distilled water. The whole is centrifugalised in a powerful machine. The clear

but opalescent liquid collecting at the top contains no tubercle bacilli, and constitutes in the first centrifugalisation tuberculin O. The remainder, containing the *débris* of the tubercle bacilli, forms tuberculin R. This remainder is dried and pounded, distilled water added, and the whole again centrifugalised. This process is repeated until hardly any residue remains. Twenty per cent. glycerine is then added to both preparations to ensure their preservation. The dose is 1-500 mgr. gradually increased up to 20 mgr.

The most important part of Dr. Koch's communication undoubtedly lies in the results obtained, and these include both the effects noted upon tuberculous lesions in animals and clinical observations in man. No ill-effects of any kind were produced. No reaction is required, and hence one of the most serious objections to tuberculin is removed. The clinical results are decidedly encouraging. With the caution displayed in earlier communications by Dr. Koch, but not always by his followers, "improvement" is spoken of, for the patients have not been under observation long enough to warrant the term "cure." We may here emphasise the fact, alluded to on many occasions by Dr. Koch, that tuberculin treatment is useless in advanced phthisis.

There are two conditions, it seems to us, upon which successful bacteriological treatment must depend, and they are (1) early treatment, based on correct diagnosis; and (2) in serumtherapy the administration, when required, of large doses of the serum. It not infrequently happens that a neglect of these two points has brought discredit on the serum treatment apart from the question of constant strength. In a footnote Professor Koch seems to give grounds for hoping that as a result of his experiments tuberculin R may eventually form the basis of a strictly serum treatment.

45.—PROGNOSIS OF PNEUMOTHORAX.

By Samuel West, M.D., F.R.C.P.,

Assistant-Physician to St. Bartholomew's Hospital, London.

[From a paper read before the London Medico-Chirurgical Society, and reported in *The Lancet*, January 16, 1897 :]

The statements were based upon three sets of statistics :—(1) 101 cases from the records of the Hospital for Diseases of the Chest, Victoria Park, published some years ago; (2) a set of 43 cases from the registers of St. Bartholomew's Hospital; and (3) 20 cases of his own (the last two series had not yet been published). The first series yielded a death-rate of 77 per cent.;

the last two a rate of 60 per cent. Saussier's figures placed the mortality at about 90 per cent. In respect of duration, out of the first two series of 74 cases 45 died within the first month—*i.e.*, 60 per cent.; and 9 more died within the second month—*i.e.*, 71 per cent. The causes of death fell into three groups: (*a*) those in which death was the direct result of the pneumothorax itself; (*b*) those in which death was the indirect result of it and due to the complication which followed—*i.e.*, empyema; and (*c*) those in which death was the result of the original disease to which the pneumothorax itself was due—*e.g.*, phthisis. The three considerations usually embraced by the term prognosis required in the case of pneumothorax to be separately dealt with. They were:—(1) the immediate risk to life; (2) the possible duration of life; and (3) the chances of ultimate recovery. The immediate risk to life depended upon many conditions:—(*a*) the urgency of the symptoms; (*b*) the effect produced upon the opposite lung and the amount of previous disease in it; (*c*) the effect upon the heart; (*d*) the general strength of the patient; and (*e*) the nature of the cause. The duration of life was next dealt with. In respect of recovery, most statistics gave a percentage of not more than 10 per cent. The figures derived from St. Bartholomew's Hospital yielded over 25 per cent., and his own were more favourable still. It was of these cases of recovery that he wished to give an account. The most favourable cases were those in which no effusion took place, but the air was simply absorbed. Of this there were five instances. In another set of cases effusion formed, but it was serous, and recovery took place with or without paracentesis, just as it did after ordinary serous effusion. When the effusion was purulent the prognosis was much more grave, but even some of these cases might recover in time. The following cases illustrated recovery:—

(1) *Without effusion.—Case* 1.—A woman, aged 19 years, was affected with phthisis for about three months. Pneumothorax of the left side developed in the hospital, but completely disappeared without special treatment in five weeks. The phthisis made rapid progress, from which the patient died shortly afterwards. *Case* 2.—A healthy man, aged 46 years, was sent up by Dr. Parry-Jones, of Pinxton, who discovered the pneumothorax on examination of the chest. The onset had been quite latent, and there had been nothing to direct attention to the chest, the man having been at work till admission. No effusion formed and in a few weeks recovery was complete, and ten years later he was still well. *Case* 3.—A man, aged 24 years, had very doubtful signs of phthisis. Right pneumothorax developed, which was tapped, but recovery took place without effusion in the course of five weeks. No physical signs developed, and the patient was known to be in his previous health for at least twelve months afterwards. *Case* 4.—A man, aged 22 years, a football player, was admitted with what was apparently his third attack of right pneumothorax. This last attack resolved rapidly, and in four weeks the

patient was well and remained so for months, when he passed out of observation. *Case* 5.—An apparently healthy young woman, aged 15 years, seen with Dr. Waldo, of Clifton, developed pneumothorax without any very urgent symptoms. She recovered in the course of some weeks and remained in good health to date, seven years later.

(2).—*After serous or sero-purulent effusion.—Case* 6.—A man, aged 22 years, was admitted into the hospital with right hydro-pneumothorax of probably three months' duration. Three weeks later 43 ounces of clear serous fluid were removed, and again, after three weeks, 22 ounces were taken away. From that time, nearly 14 years ago, he had continued in perfect health. *Case* 7.—A man, aged 24 years, presented well-marked signs of phthisis at the left apex. While under treatment left pneumothorax developed. Effusion formed and 22 ounces were removed. In a fortnight all signs of air had disappeared. A week after this there was a sudden recurrence of the pneumothorax, which also rapidly subsided, and in three weeks after the second attack the patient had lost all signs of it. *Case* 8.—A man, aged 21 years, was seized with left pneumothorax without very urgent symptoms and without obvious cause. A good deal of fluid formed, but it was all spontaneously absorbed, and he made a complete recovery. Six months later he came again under treatment with pneumothorax of the opposite side. A little fluid formed, but that was also absorbed, and again the patient recovered, and was still in good health six years after the attack. *Case* 9.—A man, aged 31 years, was admitted to hospital with pneumothorax with effusion. Three weeks later 80 ounces of clear serum were removed. The fluid re-accumulated, but the patient feeling better, refused any further treatment and left the hospital.

(3) *With purulent effusion.—Case* 10.—A man, aged 46 years, was admitted with pneumothorax of 14 days' duration. Ten days after admission he was tapped and 74 ounces of clear serous fluid were withdrawn. Two weeks later he was tapped again, but this time no fluid could be obtained. Shortly afterwards the puncture suppurated and a clear sero-purulent fluid was discharged. The patient improved slowly, but the sinus never closed completely, and he died from phthisis a year later. *Case* 11.—A man, aged 29 years, came under observation with left pneumothorax with some effusion. The attack had originated without definite symptoms, so that its duration could not be fixed. In the course of two weeks he improved greatly and had gained three pounds. He then began to spit up pus, and from this time made more rapid progress. Six weeks later he left the hospital greatly improved in general health, but expectorating some ounces of pus daily. It would have been better to have laid the side open, but the patient refused operation. Dr. West thought that its share in the diminished mortality of other diseases of the thorax might fairly be claimed for pneumothorax, and he attributed this to the better comprehension of the true nature of the affection and its dangers and to the better treatment of the cases, especially during the early days of the attack, when the risks to life are greatest.

In the discussion Sir Dyce Duckworth considered the paper the most complete and important of recent years, and congratulated Dr. West on his results. The most serious cases were those associated with empyema. He thought that the presence of pus in the pleural cavity was much less harmful than might be expected, and he endorsed the teaching of Sir Andrew Clark and others that interference in such cases was

usually harmful and led to rapid extension of the lung mischief.

Dr. De Havilland Hall considered the prognosis of cases occurring in the apparently healthy to be very good, the air being absorbed in about six weeks and the amount of discomfort caused surprisingly little. Many, however, developed phthisis in later life.

Dr. West, in reply, joined issue with those who deprecated interference in cases of pyo-pneumothorax. He believed that early removal of the pus by modern methods was advantageous in many cases. Good results, however, could no more be expected from a neglected pyo-pneumothorax than from a neglected empyema.

DISEASES OF THE ORGANS OF DIGESTION.

46.—HEMORRHAGE FROM THE STOMACH.

By Henry M. Lyman, A.M., M.D.,
Professor of the Principles and Practice of Medicine,
Chicago, Ill.

[The following is taken from Dr. Lyman's paper. Obviously some of the causes tabulated are very rare :]

Many causes may operate to occasion hemorrhage from the stomach. Mechanical injuries, chemical erosion with acids, alkalies, &c., heat, as when very hot substances are swallowed, inflammation and ulceration of the stomach, carcinoma of the gastric walls, varicosity of the gastric veins, with or without cardiac disease, aneurism and rupture of the gastric arteries, hepatic disease and obstruction and stagnation of blood in the portal vein, hemorrhoidal or menstrual suppression, pregnancy, violent vomiting, excessive parturient effort, nervous derangement, hysteria, paretic dementia, all of the so-called infective diseases, including the malarial class, blood diseases, such as pernicious anæmia, scurvy, purpura, and hæmophilia, mineral poisons, arsenic, phosphorus, causing fatty degeneration of the vascular walls, auto-intoxication, such as occurs in uræmia and cholæmia. Tubercular disease of the spine or other neighbouring organs occasionally causes abscesses that erode the gastric wall, and thus produce hemorrhage. Sometimes an aneurismal sac may burst into the stomach and thus excite vomiting of blood. Gastric hemorrhage occurs among women more frequently than

among men, for the reason that its most common cause—ulcer and disturbance of menstruation—are usually encountered by the female sex. Children seldom exhibit the phenomenon, except in the form of melæna neonatorum, which is sometimes witnessed in the case of new-born infants.

I must now proceed to warn you that mere expulsion of blood does not by any means warrant the diagnosis of gastric hemorrhage ; there are other sources from which blood may enter the mouth. Bleeding from the posterior nares, pharynx or fauces is often sufficient to cause copious expectoration of blood, and sometimes enough may find its way down the œsophagus to excite bloody vomiting. In the same way blood from the air passages may reach the stomach and there arouse the act of emesis. But careful examination of the cavities in question, and observation of the quality of the blood will soon clear up the diagnosis. Sometimes, in certain cases, there is vomiting of dark-brown or rusty-coloured matter that may be incautiously mistaken for the coffee-ground discharge of cancer, but a microscopic examination will reveal the absence of blood corpuscles, and may sometimes detect the presence of bismuth, iron or other preparations which darken the contents of the alimentary canal. It is hardly possible that a physician could be deceived by the presence of wine, coffee, beet juice, cherries, red raspberries, or other colouring matters in the evacuations from the stomach. Greater difficulty would be experienced in cases of malingering, where the patient had swallowed the blood of an animal and vomited it for the purpose of deception. Observation in confinement and the absence of all symptoms of real loss of blood, such as pallor, faintness, debility and tardy convalescence, would, however, be decisive against actual hemorrhage.

Hemorrhage from the stomach is not often fatal, but I have seen patients reduced by it to the last extremity before the cessation of bleeding. In cases of chronic ulceration of the stomach the patient is usually enfeebled and pale in consequence of repeated losses of blood and malnutrition. Sometimes these sufferers appear to be plump and in good flesh, but this appearance is due to imperfect oxidation through impoverishment of the blood. The red corpuscles are not sufficiently numerous to convey sufficient oxygen to the tissues, and the nutriment of the body is therefore largely converted into fat. Hemorrhage is sometimes the direct consequence of a fatty degeneration of the vascular walls in cases of chronic anæmia. Though not often a direct cause of death, the occurrence of gastric hemorrhage is to be deplored, by reason of the profound exhaustion and tardy or incomplete convalescence that follows. In every case of gastric hemorrhage it is important to ascertain

its underlying and predisposing causes, so as to guard against its recurrence. This is especially important in toxic and infected cases, including malarial cachexia. During an attack of hæmatemesis the patient should remain in the recumbent position, and if he becomes faint the head should be depressed by raising the foot of the bed. He should swallow small pieces of ice, an ice-bag should be laid over the seat of pain, which, in round ulcer of the stomach, is usually very definitely circumscribed, and half a drachm of purified liquid ergotin should be given every six hours by hypodermic injection. If faintness and collapse are imminent, the ordinary restoratives should be employed, mustard externally, enemas of whisky and water and the hypodermic injection of a drachm of a 10 per cent. solution of gum camphor in olive oil. The patient should be nourished for several days by rectal feeding, nothing being introduced into the stomach but ice and a little iced milk. When there is reason to believe in the existence of an ulcer, olive oil may be given in half-ounce doses as often as they can be tolerated. When there is no inclination to vomiting, styptics may be cautiously administered, but their utility is considerably restricted by the fact that they so often excite nausea and violent retching. Among the most valuable of these agents are tannic acid, dilute sulphuric acid, acetate of lead with opium, the solution of the persulphate of iron, fluid extract of hydrastis, oil of turpentine and Merck's stypticin in doses of one grain every two or three hours. A favourite domestic remedy is alum whey, prepared by the addition of a teaspoonful of alum to a pint of milk, which is then gently heated till coagulation takes place. The whey should be strained away from the curd, and drank cold in doses of an ounce every hour or two. Whatever is given should be administered in small quantity, frequently repeated, so as to avoid vomiting.

When hemorrhage is dependent upon malarial poisoning, quinine should be given in large doses, 15 to 30 grains a day. If not tolerated by the stomach, it may be given by rectal enemata. In desperate cases the propriety of transfusion of blood may be presented for consideration. But experience shows that this remedial measure only too often serves to revive a bleeding that had merely subsided so long as the veins were empty. Better results have been obtained from the hypodermic injection of one or two pints of a salt solution of the strength of three-quarters of 1 per cent., or three and a half grains of salt to the ounce of distilled water. This solution may be very easily injected into the loose areolar tissue in either flank of the body, whence it is rapidly absorbed into the lymphatic vessels.—*Journal of the American Medical Association, April* 3, 1897.

47.—A CASE OF GASTRIC ULCER WITH RECOVERY AFTER SYMPTOMS OF PERFORATION.

By E. A. Seale, M.D. Dub.

[Such cases as the following must not lead one to overlook the importance of operative treatment in at least many cases of perforated gastric ulcer. See present number of *Retrospect.*—E.F.T. :]

Dr. E. Claude Taylor's report in *The Lancet* of October 10 (see *Retrospect*, vol. cxiv. p. 91), of a case of perforation of a gastric ulcer with recovery, leads me to send you some notes on a rather similar case :—

On October 1, I was called to see a girl who was taken suddenly ill, and on arriving about an hour later (9.30 p.m.) I found the following conditions :—The girl lay with her knees drawn up, her eyes closed, her face very pale, and her skin rather clammy. She constantly complained of intense abdominal pain, though in a voice scarcely above a whisper. The temperature was 99·2° F. in the axilla ; the pulse was 104, and rather small and soft; the respirations were 30, altogether costal. The abdomen was moderately full and very tense and resistant; tenderness was extreme in the epigastric region over an area about the size of a crown piece just below the ensiform appendix. Elsewhere slight pressure could be borne. Very severe pain was also complained of over the point of the left shoulder. The tongue and mouth were rather dry; there was no vomiting. While dressing that morning she felt some pain in the stomach and had to sit down and rest for a while. During the day there was some indisposition, but not sufficient to prevent her doing her work. She had boiled rice and milk for dinner without the slightest after ill-effect. At about five o'clock in the afternoon she felt a sudden acute pain in the epigastric region, turned faint, and was completely prostrated. In this condition of collapse she remained until I saw her. At the time of the onset of the pain no muscular effort was being made. I found that within the last three years she had been treated for ulcer of the stomach on several occasions, and, indeed, was under treatment for it to within a couple of months previously. Since then there had been no pain in the stomach, and ordinary diet was taken. On one occasion, about twelve months ago, she vomited blood. I gave a quarter of a grain of morphiæ sulphas and $\frac{1}{150}$th of a grain of atropiæ sulphas hypodermically, and repeated it in twenty minutes as the pain seemed unaffected. This gave her a quiet night though it did not produce sleep. Linseed poultices were also applied to the abdomen. All food by the mouth was prohibited, and I ordered enemata of warm milk instead, with bovril and brandy occasionally. Next morning her temperature was 100·8° ; the pulse 112, fuller, and quite soft and regular. The respirations were 34 and still costal in type. Her aspect was much the same as the night before ; the knees were drawn up and the severe epigastric and shoulder pain was still present. The tongue was quite dry and had a thin white coating, the lips were dry and crumpled looking, and the skin was moist. The pupils were moderately small. The abdomen appeared to be fuller ; it was not quite so resistant, but more tympanitic. Tenderness was still very great in the epigastrium, though decidedly less over the abdomen generally. In the mammary line, on the right side, resonance extended for one-and-a-half inches from the costal margin. During my visit there was some nausea and inclination to vomit. I again gave half a grain of morphia hypodermically and the pain became slight a quarter of an hour afterwards. Her condition caused me so much anxiety that I asked for a consultation, and Dr. Hector Cameron very kindly came from Glasgow the same evening. At our visit (6 p.m.) the general appearance was little changed, although the temperature was then 102° and the pulse 120.

The abdominal tenderness, on the whole, was slightly diminished, but I noticed no alteration in that in the epigastrium. Her state not being of such gravity as to necessitate a section being done, expectant treatment was advised, nutrient suppositories being added to the rectal *ménu*, and the milk peptonised. From this time there was steady improvement, the temperature and pulse coming gradually down until the normal line was reached on the 11th with a pulse of 72. On the third day she began to stretch the legs down occasionally. The abdominal resistance and tenderness were distinctly less and respiration was less costal in type. She continued to have half a grain of morphia hypodermically twice daily till the 4th, when a quarter of a grain seemed to be enough. After this no more morphia was administered till 1.30 a.m. on the 6th, when I was called on account of great increase in the point-of-shoulder pain. I then gave her a quarter of a grain. The temperature, which was 100·2° the previous afternoon, had risen to 100·8°, and the pulse from 106 to 122. There was no aggravation of abdominal symptoms. On the 7th epigastric pain and tenderness were quite gone; the knees had kept down all the time, and the tongue was moist and cleaner. Her shoulder pain, however, continued to the next day. On the 6th I allowed an occasional sip of water to moisten the tongue and allay her thirst, and on the next day I gave her one ounce of peptonised milk every four hours. As early as the third day her mother, mistaking my instructions, had given her a cup of milk in small quantities at a time without any apparent ill-effect.

From the signs and symptoms presented by this case it would be interesting to theorise a little as to what actually did occur. Of the existence of a peritonitis there can be no doubt. Its sudden onset, with the previous history of gastric ulcer and hæmatemesis, suggest at once perforation of the stomach. If it was not a perforation, was it merely an inflammatory exudation over an ulcer's base? I am inclined to think a slight perforation took place, chiefly from the sudden onset with collapse and intense epigastric pain. The comparative emptiness of the stomach some hours after a light, bland meal of rice and milk and the immediate dorsal recumbency would each be important factors in restraining further escape, especially if the rupture was in the anterior wall. We have evidence, directly and indirectly, that it was there: directly from the localised epigastric pain and tenderness, and indirectly from the left shoulder-tip pain. We know that it is the left vagus which supplies the anterior wall of the stomach and that it communicates with the spinal accessory, which sends branches to the trapezius over the shoulder-joint. This connection Dr. Embleton pointed to as answerable for the so-called sympathetic shoulder-tip pain originating in terminal filaments of the vagus. Moreover, shoulder-tip pain is a text-book symptom of perforation of the stomach occurring sometimes. The salient point against the non-rupture but inflammatory exudation alternative is suddenness of onset. It would be of deep interest to know if any cases have been reported of perforation of the posterior wall in an area supplied by the right vagus in which pain in the right shoulder was a symptom.—*The Lancet*, *December* 19, 1896.

48.—DIAGNOSIS OF DILATATION OF THE STOMACH.

By Drs. W. Pepper and A. Stengel.

There are two chief difficulties in the diagnosis of dilatation of the stomach : one, the class of cases to which the term is applicable ; the other, the difficulty of determining the lesser grades on account of the variability in the size of the normal organ. What is termed atony of the stomach is merely a beginning stage of actual dilatation, which may or may not progress. It is impossible to assign any definite limits to the normal organ, or to determine a normal capacity. Usually, the viscus is placed so that the fundus lies beneath the base of the left lung, and almost completely covered by its projecting margins ; the lower border is well above the umbilicus ; the pylorus lies in the angle between the right border of the xiphoid cartilage and the right costal margin. When the lower margin of the organ lies near the umbilicus, or below it, this is due in the main to dislocation, and a corresponding dislocation of the pylorus and of the lesser curvature is to be expected. When there is actual dilatation the lower margin is similarly placed, but the lesser curvature and pylorus are much less displaced. The size varies greatly in different individuals. The mere question of size necessarily loses much of its old-time significance as an indication of dilatation. Ewald, Riegel, and others have shown that all the physical signs of enlargement of the stomach may be present without any evidence that there is functional insufficiency. Ewald terms this condition megastria or megalogastria.

The authors would classify all cases of dilatation into two groups—(1) atonic dilatation, (2) obstructive dilatation. Atonic dilatation may occur (1) by primary or absolute atony of the walls ; (2) by secondary or relative weakness. Primary atony occurs in persons of relaxed fibre ; in nervous, anæmic, or debilitated conditions ; or it may be a complication of chronic, or even of acute gastritis. Sometimes it may be acute. Relative atony results from over-eating and drinking ; by adhesions or by dragging of the omentum in corpulent persons. Somewhat similar conditions are present in cases in which cicatrices of gastric ulcers occupy parts of the stomach removed from the pylorus. Obstructive dilatation is dependent upon pyloric stenosis, whether organic or functional, and due to disease of the pylorus itself or to outside causes. Carcinoma and cicatrices of pyloric ulcers are the most important lessons ; but, occasionally, other neoplasms or hypertrophy of the pyloric, fibrous, or muscular tissue may be active causes.

Dislocation of the stomach may produce mechanical obstacles to the discharge of the gastric contents. Causes of pyloric

obstruction outside the stomach are numerous. Tumours may compress the pylorus ; inflammatory adhesions may bind it firmly to the head of the pancreas and the posterior abdominal wall ; displaced right kidney may press upon it. The ultimate diagnosis of dilatation of the stomach must rest upon the recognition of deficiency of the power of the stomach to project its contents into the intestine, and upon the discovery of enlargement of the organ. Abdominal inspection often reveals abnormal distension. Frequently the upper part of the abdomen is hollow and depressed in a transverse furrow, while the hypogastric region is distended. Peristaltic movements can sometimes be detected. The veins of the lower portion of the abdomen, particularly those passing upwards over the iliac fossæ, are habitually enlarged and prominent. Palpation over lax abdominal walls may sometimes detect the lower margin of the greater curvature. Succussion-splash can be obtained when the viscus contains fluid. Peristaltic waves may often be felt. Auscultation detects succussion sounds, which, when they occur at times at which the stomach should normally be empty, are significant, as indicating loss of motor function and abnormal retention of gastric contents.

A number of other methods of determining the size and capacity of the stomach have been suggested. Methods which depend upon the amount of liquid introduced cannot be relied upon. Dehio determined the lower border by introducing measured quantities of water and then percussing in the erect posture. The method of illumination or gastro-diaphanoscopy has not proved satisfactory. Auscultatory percussion, according to the authors, furnishes a reliable indication of the position, and, to a certain extent, of the size of the stomach. In applying the method they use a double stethoscope with long rubber conductors, so that while the patient supports the bell near the position of the fundus, then below and toward the body or pyloric end, the observer is able without discomfort to perform the percussion, approaching the stomach gradually from all points. Next, the percussion is reversed, the finger or plexi-meter being placed over the stomach itself and near the bell of the stethoscope ; then gradually carried outwards towards the periphery until the limits of the organ are passed.

Inflation may be carried out by several methods. The best known is by administering sodium bicarbonate, followed by tartaric acid. Distension by effervescing mixtures is entirely uncontrollable, and in some instances actually dangerous. Inflation by atmospheric air has the only objection, that it necessitates the passage of a stomach tube.

As regards the determination of the motor activity or sufficiency of the walls of the stomach, a number of methods

have been recommended. Among the older is the salol test. According to Ewald, the salol is decomposed, when it reaches the alkaline intestinal secretion, into salicylic acid, which appears in the urine within 40 to 60 minutes in health. The authors find that this method possesses no practical usefulness. A measured quantity of oil has been introduced, and the portion remaining after two hours removed by the stomach tube. Leube's method seems the most reliable. He finds that all traces of a meal of meat, soup, and bread, should disappear from the stomach in the course of seven hours when the motor activity is normal. The methods of measuring and recording motor activity with the aid of instruments, acted upon by columns of water or air, compressed in bulbs or other contrivances, introduced into the stomach, are cumbersome, impracticable, and useless.

Lactic acid, when present, is an indication of stagnation. The amount of urine is another indirect evidence of motor insufficiency. In considering the differential diagnosis, the following points must be remembered : Megalogastria may be met with without symptoms of functional disturbance. Such cases can be considered as physiological or natural largeness of the stomach, provided that there is no sign of stagnation of food, or of disturbance of digestion. Gastroptosis or displacement of the stomach, the vertical position of Kussmaul or gastroptosis of Glenard, must not be confounded with gastrectasia. In these cases it is most desirable to determine the position of the pylorus and lesser curvature. Obstruction must always be clearly distinguished from atonic gastrectasia. Obstructive dilatation is generally progressive and persistent. The obstructive forms are still further to be differentiated into the malignant and non-malignant.—*American Journal of the Medical Sciences, January*, 1897. From Dr. Kelynack's abstract in the *Medical Chronicle, March*, 1897.

49.—MALIGNANT DISEASE OF THE STOMACH.

By Sir Richard Douglas Powell, Bart., M.D., F.R.C.P.,
Physician Extraordinary to the Queen ; Physician to the Middlesex Hospital.

[The record of a case of diffuse malignant disease of the stomach is omitted here, as also some other details.]

There are a few facts to remember about cancer of the stomach. It is almost always a primary disease, and as such it is fairly common ; but as a secondary affection it is extremely

rare. Next to cancer of the uterus, cancer of the stomach is the commonest of internal cancers, and its frequency in men as compared with women is said to be five to four, though I should myself have expected a somewhat higher proportion for males. Therefore it is absolutely a more common disease than cancer of the uterus. It is most prevalent between 40 and 60, though it may be met with before and after those ages. It is hereditary in one-seventh of the cases. This apparent heredity of cancer is lessened by death occurring from other diseases at earlier ages, cancer becoming manifest at later periods of life. The varieties of cancer of the stomach are mainly four—epithelial, encephaloid, scirrhous, and colloid. The epithelial and encephaloid cancers are, roughly speaking, ulcerative growths when affecting the stomach ; so that people suffering from these two present the symptoms of ulcer of the stomach plus the special symptoms of malignancy. The pain is more severe and continuous than in simple ulcer of the stomach ; it is less increased by food, and less relieved by vomiting of food. In ordinary ulcer of the stomach the patient suffers great pain after meals, which is not relieved until half-an-hour or so afterwards ; they vomit, and then they become comparatively comfortable. That history is not so clearly drawn in ulcerative cancer of the stomach, whether it be epithelial or encephaloid. Again, in malignant ulceration of the stomach, especially if the cancer be of the encephaloid variety, the patient suffers from hemorrhage ; but instead of having a profuse hemorrhage once or twice, they suffer from a more frequent hemorrhage of a slighter kind and more grumous in character. Then the cachexia and the emaciation are very much more marked in cancer than in ordinary ulcer of the stomach. Again, in cancer of the stomach there is always, practically, a palpable tumour, and almost always, towards the end, secondary lesions, lesions very commonly of the liver, commonly of the pancreas, commonly of the peritoneum, and sometimes hard nodules presenting on the surface, especially in the neighbourhood of the umbilicus. Of all the stomach cancers, the encephaloid is the most rapid in its development.

Epithelial cancer is of longer duration and much more difficult to diagnose from chronic ulcer of the stomach. It more commonly involves the œsophageal end of the stomach, and sometimes attacks the seat of old ulcerations. Scirrhous and colloid cancers are not as a rule ulcerative. Colloid cancer is a rare disease, and I will not discuss it on this occasion. Most generally the scirrhous is an obstructive growth of the stomach, and especially attacks one of the orifices, and of these most frequently the pyloric. It appears as a hard, smooth,

annular thickening around the pyloric end of the stomach, not encroaching upon the duodenum. It narrows the opening in two ways. First, it renders it rigid and inexpansile, and interrupts the onward peristalsis, and thus accounts for the early obstruction observed in this disease. In such a case you may feel, and may often see, the movement of peristalsis until the pylorus is reached ; then there is a backward wave, owing to the obstruction at the thickened end of the viscus. Later, there is fermentation of the residual contents of the stomach, just as, in chronic bladder troubles from disease of the prostate, we get residual urine setting up fermentation in the other urine which is added to it. Vomiting of the disintegrated and fermenting food occurs from time to time ; and often the patient waits for twelve or even twenty-four hours, and then vomits a large quantity of fermenting, disorganised, frothy stuff from the stomach. The vomit is generally very acid, and microscopically presents all sorts of organisms, amongst them the sarcinæ ventriculi. The acidity of the fluid, however, is not due to hydrochloric acid, but to the fermenting acids—butyric, lactic, and so on. The stomach hypertrophies and then gradually dilates, and with the dilated stomach we get fluctuation or splash, and the outlines of the stomach are greatly increased. The tumour can generally be felt as a hard square lump ; and it is to be noted that, although it occupies more or less the region of the pylorus, yet the situation may be a very varied one—anywhere between the pyloric region and the right umbilico-inguinal region. Scirrhous cancer of the pylorus does not readily invade the neighbouring parts, but remains generally with a smooth external surface ; and so it can, as the stomach enlarges, be displaced in various directions, and the stomach assumes a more vertical position than formerly. Constipation is a frequent symptom ; anæmia and progressive emaciation are constant symptoms. Life may be a long time prolonged by treatment, by washing out the stomach and feeding the patient with peptonised foods and a certain amount of stimulant. In this way the duration of scirrhus of the pylorus may be prolonged to from twelve to eighteen months.

Cancer of the stomach is a fatal malady, and I would ask you to be very careful in coming to a diagnosis. You may suspect it in your own mind, but do not say anything to your patient until you are absolutely certain about it. I suppose such of us who have seen many cases of abdominal disease have been shocked every now and then by feeling, in cases presenting suspicious stomach symptoms, a lump in the abdomen which a little patient observation proves to be a fæcal lump in the transverse colon. All you have to do, under those circumstances, is not to betray your anxiety ; after a laxative the

lump may disappear, and you will thus save your patient a very grievous alarm if you have been wise enough to keep your own counsel.

You can do very little in the way of treatment, except of the palliative kind, in these cases. In the case of scirrhous pylorus, where there is obstruction and dilatation of the organ, you can do very much to keep your patient going by washing out the stomach, and then giving a meal of peptonised beef-tea, which it would rapidly absorb. In encephaloid disease you must be very wary how you inject fluids, because you have to deal with a soft, disintegrating mass, and you are apt to bring about perforation or hemorrhage by distending the stomach with fluids. When the patient ceases to be able to take food by the stomach without getting very severe pain, you can still keep him free, to a certain extent, from the pangs of starvation by rectal feeding; and you can keep him more or less free from suffering by a sufficient amount of morphia. Cancer is one of those diseases in which you are completely justified in keeping your patients under the influence of sedatives such as may be necessary to secure their freedom from suffering. A small subcutaneous injection in the forenoon and a larger one in the evening will often keep a patient comparatively happy. In cases of ulcerative cancer you will do even better by giving, by the stomach, small doses of morphia at frequent intervals—such quantities as 5 m. of the solution of morphia in the British Pharmacopœia.—*The Practitioner*, *February*, 1897.

50.—THE TREATMENT OF CANCER OF THE STOMACH.

The purpose of the present article is to consider the treatment of cancer of the stomach from a medical point of view. That relief and even cure have in some instances been obtained through surgery is admitted. Most cases, however, remain from the first under the care of the physician, and, for reasons deemed sufficient, surgical means are not tried. Since the discovery of improved methods of diagnosis through the chemical examination of the contents of the stomach, there has been a reaction against the do-nothing *régime*, and a feeling has become prevalent that something more can be accomplished for the amelioration of these unfortunate patients. This has found its latest expression in an article by Prof. Albert Robin in the *Bulletin Général de Thérapeutique*. In the first place, though it is rendered certain that there are no absolute chemical criteria of gastric carcinoma, yet in the great majority of cases there is

absence of digestive power and of the normal acid secretion ("apepsia and anachlorhydria"). Lactic acid is generally found in excess, and sometimes butyric and acetic. The digestion of albuminoids is wholly insufficient and *nil;* the stomach "has become an inert receptacle in which aliments stagnate and are not utilised." It has been found, however, that amylaceous matters are fairly well transformed, for sugar is constantly detected in the contents of the stomach after the ingestion of starchy food; the lactic acid comes from this source. Hence, then, a leading indication is to diminish or suppress in the daily fare of these patients albuminoid foods, and to prescribe a starchy diet. By fulfilling the latter indication vicious fermentations are in a great measure arrested. The complete interdiction of animal food is, however, not called for when the pylorus and intestine are not involved, for there is then the possibility of ready transit of ingesta into the intestine, whose power of digesting albuminoids is well known. Meat powders and peptones may be permitted in these cases of integrity of the pylorus; even tender fowl, lean, tender meat of whatever kind, white fish, meat jelly, &c. Azotised feculents, as boiled mashed peas, pea soup, bean porridge, also cooked fruits, cold biscuits, pilot bread, &c., may often be eaten with impunity, while fresh bread, pastries, cheese and sugar give great distress by the fermentations which they occasion. Patients suffering from gastric cancer should drink but little, and eat but three times a day. Robin proposes numerous drugs in the treatment of this disease, and believes that more benefit may be obtained from a judicious use of pharmaceutical remedies than many practitioners are aware of. He gives condurango as a stomach tonic—not because it is antagonistic to the cancer. Half an ounce of the bark is steeped in a pint of water; it is somewhat reduced by boiling, strained, and given in the dose of a dessert-spoonful just before meals. Tincture of nux vomica in 5-drop doses may be substituted. Sometimes he gives just before meals a powder containing three grains of ammonium chloride, five of sodium bicarbonate, and two of Dover's powder.

To favour digestion, the patient is directed to take at the end of every meal a few swallows of a solution of hydrochloric acid in water, 1 to 1,000; at the middle of the meal, a "cachet" containing ten grains pepsin, and two each of maltine and pancreatin. To prevent fermentations, a few grains of sulphur or naphthol are given after eating. Lavage of the stomach is sometimes indicated, especially when there are abundant acid vomitings, much pain and stenosis. Vomiting is a common symptom, and is sometimes incoercible. Among the remedies which Robin proposes is cocaine. Give five minutes before each meal a teaspoonful of a solution containing 15 centigrammes

(2½ grains) to 150 grammes (about 5 ounces) of water. Sometimes a teaspoonful of menthol water or chloroform or peppermint water will do as well.

A favourite prescription of his for the vomiting of gastric carcinoma is the following:—Picrotoxine, 5 centigrammes; hydrochlorate of morphia, 5 centigrammes; sulphate of atropia, 1 centigramme; cherry laurel water, 10 grammes. M. Sig. Dose, two to eight drops a few minutes before the principal meals. An opium suppository may sometimes with good effect be employed in the morning on awakening.

For severe hemorrhages the main reliance is on ergotine, employed subcutaneously, or in solution along with gallic acid and turpentine. For the relief of pain, the main reliance must still be on subcutaneous injections of morphine. In such a disease as this the fear of making the patient a morphiomaniac need hardly be entertained. For the pyrosis, a powder of magnesia, bicarbonate of soda, bismuth and opium is perhaps as good as any that can be prescribed. The obstinate diarrhœa which attends many cases of gastric cancer will often yield quite promptly to an old-fashioned pill, consisting of calomel, ipecac and opium, one-sixth grain each, to be taken every six hours. For the cachectic state the glycero-phosphate of soda is recommended; this may be taken by mouth or introduced subcutaneously.—From a leader in the *Boston Medical and Surgical Journal, January* 14, 1897.

51.—PERITYPHLITIS IN CHILDREN.

[A discussion, introduced by Dr. Karewski, took place at the Society for Internal Medicine, Berlin.]

Renvers did not believe one was justified clinically in separating the perityphlitis of childhood from that of adults. It was, however, a frequent disease of childhood. The mortality of the disease was 7 to 8 per cent. Sahli placed it at 9 per cent. That of the surgeons was much higher as they got their cases later. In the last three years he had seen 134 cases—72 males, 62 females—of which number 47 had been sent on to the surgeon. Of the remaining 87 cases three had died within twenty-four hours. The other 84 had recovered under the usual opium treatment. Of the 47 sent to the surgical clinic 10 had died (21 per cent.). Five of these cases had already multiple abscesses, the rest had only circumscribed peritonitis. Thus, in the 134 cases, the mortality was 9·7 per cent. The mortality from operation was 18 per cent., but the patients were generally suffering from general peritonitis and sepsis. Such cases were

not suitable for operation, and even in those of circumscribed peritonitis he tried first of all to limit the process by opium, as operation almost always converted a circumscribed peritonitis into a general one. It must be acknowledged that the pathology of the disease had been materially advanced by the surgeon. We know now that fæcal stasis was a result of perityphlitis. Lately the name appendicitis had been chosen for the disease, but it was not a correct one. Appendicitis had only something in common with perityphlitis when irritation of the peritoneum had come on. The appendix might be filled with pus or studded with ulcers, but this was not necessarily perityphlitis. Appendicitis was common in children, but when the pus passed into the bowel no perityphlitis was set up. Therapeutically considered, two groups might be formed :—(1) Perityphlitis simplex, with exudation without suppuration ; the inflammation generally subsided in four or five days, but relapses were frequent. (2) Perityphlitis purulenta ; this form could doubtless recover without operation, but it sometimes took weeks or months. Operation had the advantage of hastening recovery and avoiding complications. He had never seen general peritonitis recover.

Baginsky related his experiences in the Kaiser and Kaiserin Friedrich Kinder Krankenhause. In recent years he had seen 26 cases of perityphlitis out of a total of 2,900 cases of illness ; 19 had recovered without operation, 2 had died, 5 had been operated on, 4 of which died. It was difficult to determine the time for operation. When this was delayed he had seen a successful result by bursting into the rectum or bladder. The cases operated on had not given him much encouragement. Only one case had recovered after a tedious illness. At the same time he would not put off operation too long. He was decidedly opposed to operation in diffuse peritonitis ; he had never seen a single good result from it.

Fürbringer had treated 389 cases of perityphlitis in the Friedrichshein Hospital ; 54 of these were children, with a mortality of 2, or 3·7 per cent. ; 38 recovered directly, 8 were improved, and 6 were transferred to the surgical clinic. In his private consulting practice, on the other hand, the mortality had been 50 per cent. Of the 38 cases, quite a number had suppuration. The results of the physician were, therefore, not bad enough, and those of the surgeon not good enough, to justify a transference of the cases to the extent desired by some. The good results were obtained by rest and opium. He was in favour of exploratory puncture in suitable cases if carefully performed.

Sonnenburg had operated in 37 cases of perityphlitis of childhood, with 6 deaths, or 16 per cent. ; 17 were operated on

in the first attack, with circumscribed suppurative peritonitis. We now knew that when an attack was over the disease had not gone. The recoveries spoken of by the previous speaker should not be taken too strictly, as the disease was very insidious, and often after ten, fifteen, or twenty years relapses might take place. Real recoveries were rare. The mortality of the attacks was 10 per cent., that of the disease 20. Of 230 cases operated on, he had had 40 deaths. In 29 cases of diffuse peritonitis, a previous circumscribed peritonitis could be shown. It was better to operate too much than too little, as in a few days the condition of the patient might change so much that an operation could no longer save life.

Heubner said the prognosis of the disease as treated by the physician was not so bad as stated by the previous speaker. Kleinwächter's statistics from Breslau, extending over thirty years, only gave 17 relapses; all the others recovered permanently. Purgatives should be given cautiously in children and not at all in doubtful cases. As regarded treatment, he fully agreed with Karewski.

Fürbringer defended his statements as to permanent recoveries. He had observed such cases a long time, and he could only repeat that their recovery under all sorts of diet was complete and permanent.

Karewski, in reply, said he was in favour of operation, even in diffuse peritonitis ; it gave a slight chance, whilst otherwise the case must end fatally.—From Report in *The Medical Press and Circular*, *March* 17, 1897.

52.—THE SUBCUTANEOUS EMPLOYMENT OF STERILISED SALT WATER IN INTESTINAL AFFECTIONS OF NURSLINGS.

By MM. Barbier and Deroyer.

The *Presse médicale* for November 28 publishes a report of a recent meeting of the Société médicale des hôpitaux, at which M. Barbier and M. Deroyer gave an account of some experiments they had made with this artificial serum in order to establish especially the modifications of the temperature and of the pulse. The serum which they employed was composed of a 7 per cent. [7 per mille ?] solution of salt water. The injections were made under the skin of the lateral region of the abdomen. The doses employed were somewhat varied, but never exceeded 30 cubic centimetres in twenty-four hours—that is, 15 cubic centimetres in the morning and 15 at night. The physiological effects were

as follows :—Elevation of the temperature was observed to be almost constant, with some variations ; this constituted, with the acceleration of the pulse, one of the normal symptoms which occurred in the period following the injections which the authors called the "time of reaction." This elevation of temperature varied from two-tenths to eight-tenths of a degree centigrade for each injection. It was appreciable half an hour after the injection, much more distinct after two hours, and perceptible almost in the same proportion three hours after, although often the deviation observed three hours afterward would be the same or inferior to that observed two hours afterward. This seemed to indicate that the period of "ascending reaction" did not go beyond the third hour after the injection. Five hours after the injection, in fact, the temperature often varied, and was sometimes lower than that of the third hour. From this moment the temperature tended to become lower again. In fact, seven hours afterward, at the moment when the second daily injection was practised, the temperature chart showed a constant fall. In certain patients who probably presented more symptoms of poisoning, the period of reaction was shorter, and in them the authors had employed three injections a day instead of two. The thermic reaction was not observed with the same distinctness in all the patients. In those who were not very much poisoned the reaction was the most distinct ; on the contrary, when death was imminent or the children were in a state of collapse, the reaction was much less appreciable. It might be, perhaps, said the authors, the ground for an immediate unfavourable prognostic if the reaction was insufficient or there was none at all, and an indication for repeating the number of injections. The reaction of the temperature which was observed, whatever might be its condition at the moment of injection, was as follows :—Hypothermia, normal temperature, and hyperthermia.

The modifications of the pulse were parallel to those of the temperature. They consisted in an acceleration of the cardiac pulsations, which became at the same time fuller and stronger. This acceleration averaged about twenty pulsations. The modifications of the general condition seemed to result from the stimulation of the entire organism by the injections, and in particular from the elevation of the blood pressure and of the temperature. The patients who were in a state of collapse, with cold extremities, seemed to come out of this condition ; the ocular reflexes reappeared, the face resumed its natural colour, and the extremities became warm, all of which indicated a greater activity of the peripheral circulation.

The authors believed that these injections were indicated in the following circumstances :—(1) In acute infectious enteritis

with hypothermia, which did not expressly indicate, in consequence of an excessive diarrhœa, large injections of salt water. (2) In chronic enteritis which presented the same characteristics of hypothermia with progressive weakness. The authors thought that these injections were not indicated in the febrile forms, in which it did not seem called for to increase the elevation of the temperature or the acceleration of the pulse. But they were indicated when, during the course of a febrile diarrhœa, a period of hypothermia or collapse supervened. These injections had no action at all on the diarrhœa itself or on the symptoms other than those of collapse, &c., due to the presence of toxic matters in the intestine. In regard to their action on the general nutrition, it was very doubtful if there was any at all. The authors noted in certain patients who were thin before the administration of the injections a stationary condition of the weight or even a slight increase.—*New York Medical Journal, December* 26, 1896.

53.—TREATMENT OF CIRRHOSIS OF THE LIVER.

By Sir Dyce Duckworth, M.D., F.R.C.P.,
Physician and Lecturer on the Principles and Practice of Medicine, St. Bartholomew's Hospital.

[The following is taken from Sir Dyce Duckworth's paper on clinical observations on cirrhosis of the liver:]

Our vocation being to treat as well as to investigate disease, I must now add a few remarks of a therapeutical character. We may always try to arrest the progress of cirrhosis. Alcoholic habits must be absolutely forsworn at first. Unstimulating nutriment should be given, avoiding excess of fluids as far as possible. Beef, mutton, and chicken essence, milk with carbonate of soda in it, yolk of egg, and farinaceous foods are proper. Pounded meat or chicken, or in their ordinary forms, may be given. Fats and sugar should be sparingly allowed. Freshly-made lemonade and toast and water are the best drinks, but tea and cocoa may be taken. In many cases, at first, a skim-milk diet is very useful. The catarrhal state of the alimentary tract demands alkalies with saline aperients, the soda salts in effervescence being best in early stages. Tartarated soda is one of the best salts, and sulphate of magnesia is also very useful. Two actions of the bowels may be procured daily with advantage for some time. In the higher classes of patients, recourse to some spa where gently aperient sodaic waters are available is very useful, Carlsbad and Vichy

being two of the best resorts for this purpose. Later on, the chloride of ammonium in full doses is a drug in good repute, and can be combined, as desired, with alkalies or mineral acids. Our difficulties begin with the supervention of ascites. Though always a grave symptom, it is not always a hopeless one. Saline aperients with tonics may do much to moderate its onset. When pressure symptoms due to large accumulations of fluid occur, no delay in tapping the belly is warrantable. In my experience this operation is too often unduly delayed.

With care and modern, clean, practice of surgery there is no longer any risk in paracentesis. I have known it done over ninety times on one patient with benefit. I have seen good results from slow removal of fluid by Southey's cannula, sometimes even eight or ten hours being allowed for the process; but I have very seldom seen any harm result from the more rapid removal if the patient be set up, given a little stimulant, and gradually bandaged as the fluid passes out. The operation always requires two manipulators if safety is, as it should be, the first consideration. After the operation we may ply diuretics with tonics, and in most cases find a more free secretion from the kidneys owing to relief of pressure. Quinine and mineral acids are of value in chronic varieties. As in all cases we have to treat the patient and not his disease, it may be necessary to employ a small amount of alcohol daily for the benefit of the circulation. Much of our success will depend on the stage of the disease when we come to deal with it, and much, too, as I have tried to indicate, will depend on the textural proclivity and condition of the patient. I have noted that in the later stages patients suffer more miserably if alcohol be withheld from them, pedantically, so to speak, as being harmful to the disease in progress, and that they derive not merely comfort but benefit from it. Alcohol may be bad for the disease, but it is certainly good for the patient. Two ounces of brandy, or twice that amount of champagne, either well diluted, may materially benefit the patient, and our duty is to relieve suffering when we cannot remove the intrinsic causes of it. This point is apt to be forgotten by therapeutical "purists," who are not always the best advisers for the sick.

In respect of repeated tappings of the belly in the later stages, it is generally advisable to hold one's hand unless respiration is seriously impeded and the patient overborne by the superincumbent weight of fluid. We may find that tapping may be followed in this stage by symptoms of cerebral oppression, by the so-called condition of cholæmia with stupor, low delirium, and the "typhoid state." Death may then supervene in two or three days. The end may come otherwise, and especially in cases with great enlargement of the liver.

Hemorrhage either from the bowel or from the stomach, or again, from ruptured œsophageal piles, or from the nares, may prove in the first instance alarming, and profuse enough to render the patient almost ex-sanguine. All our care may avail nothing to prevent a recurrence of this, and such a flux is then certainly fatal. In such cases we may avert such a disaster by a timely application of ten or twelve leeches to the hypochondria, and the employment of magnesium or sodium sulphate as an aperient, relieving in this way the extreme venous tension in the portal system.

Lastly, let me remind you that you may meet with cases of hepatic cirrhosis, due to alcoholic influence, in persons apparently of the most orderly and respectable character, who, on the statements of their friends, as well as on their own, have ever lived temperately and moderately. There is no history of "soaking" or drunkenness. You will, however, find that such persons have been addicted for years to nightly potations of spirits and water, regarded as innocent, but which have sufficed in their cases gradually to induce the morbid state now fully developed and already often beyond the reach of our art. Let this fact warn you of the insidious harm that may grow up from such a habit. It is one of the old-fashioned habits of our forefathers that die hard. We know better than they in this our day in this respect, though by no means in all respects. Nobody in health requires alcohol as a matter of routine at bedtime, or at any time apart from meals, and this old custom has much to answer for in damaging the arteries and inducing premature senile changes. Having regard to the very varying vulnerability of the textures of different individuals, which no one can know till malign experience informs him by the sad onset of specific symptoms, the moral here is to be clearly on the safe side, and to run no risk by indulgence in any alcoholised fluids at odd times.—*The Practitioner, March*, 1897.

54.—PROTRACTED JAUNDICE.

By E. M. Brockbank, M.D.,

Late Resident Medical Officer, Royal Infirmary, Manchester.

[Dr. Brockbank relates a case due to the impaction of gall-stone in the common bile duct, occurring in a woman aged 34. The following is taken from his remarks on the case :]

In this case the symptoms of periodic pain, accompanied by rigors, vomiting, and obstructive jaundice, being almost pathognomonic of biliary obstruction, and the absence of

swelling or distension of the gall-bladder, is a strong indication that the cause of the obstruction is the impaction of a gall-stone in the common bile duct, probably at its duodenal end. Biliary obstruction from stones lodged in the cystic duct or in the neck of the gall-bladder, or from stenosis of the common bile duct by new growths in its wall or from the external pressure of tumours, is generally accompanied by distension of the gall-bladder, which is due to the retention of bile and of the secretion of the mucous membrane lining it. The periodical recurrence of rigors, accompanied though they were by but only slight pain, points to the movement of the gall-stone in the bile duct. Judging from the slight amount of pain caused by them, these movements of the obstructing stone were probably very limited in extent. It is not an uncommon event to meet with cases of gall-stones in which pyrexia occurs without any associated pain, and Chauffard believes that the irregular access of fever, without any apparent cause, in old people with healthy urinary organs, ought to make one suspicious of the presence of a calculus in the biliary system. According to this authority, pyrexia may be the only symptom of cholelithiasis in the aged. Elderly women who have passed the menopause are especially liable to attacks of gall-stones, which are difficult to diagnose on account of the absence of pain and the other regular symptoms of cholelithiasis.

In considering the symptoms of the case, the protracted duration of the jaundice is that which first attracts the attention. The discoloration of the skin and its associated symptoms have now been present for about 14 months, and are as marked as they were at their onset last year. In spite of this persistent jaundice the patient has felt fairly well, except for the occasional attacks of "weakness" which affect her. There is, of course, the unpleasantness associated with the discoloration of the skin, but she can take food, except fats, very well, and she is able to do her work at home, and to walk a fair distance without much difficulty. It is not uncommon to meet with instances in literature of patients in whom jaundice persisted for a much longer time than 14 months. Murchison records the case (132) of a woman who suffered from this affection for close upon six years, during which time she had also several attacks of pain, with rigors, vomiting, and a good deal of associated debility. She ultimately recovered; whilst another woman, under Chadwick's care, died after being jaundiced for a similar period of time. In the latter case, a gall-stone was found to be causing a partial obstruction of the common bile duct near its duodenal orifice. several cases of jaundice, lasting two or three years, have also been met with. There is no reason, therefore, why the case

I record should not recover if the impacted calculus can escape into the intestines without causing any serious damage to the structure by which it is now obstructed.

The tendency to bleed from the gums is of interest in connection with the presence of long-standing jaundice. The blood in patients in whom the latter symptom has persisted for several weeks or months very frequently undergoes changes, the nature of which is not definitely known, but which results in symptoms similar to those met with in the hemorrhagic diathesis. Many surgeons look upon jaundice of a few months' duration as a contra-indication to any operative measures for the relief of gall-stones, fearing, as they do, the onset of uncontrollable hemorrhage from the incised tissues, and especially from the mucous membrane of the gall-bladder. Others, however, have not the same amount of hesitation in adopting surgical treatment under similar circumstances, and believe that the risks of hemorrhage and its consequent results are often less than those run by the patient if medical treatment alone be adopted. This is undoubtedly so in some instances, but each case must be decided upon its own merits, and no hard and fast rule can be laid down concerning operations in cases of jaundice.

The patient whose case we are at present specially considering suffered from full gums, which frequently bled in the morning when she moved her tongue over them, for some time before the jaundice first developed. But whilst her gums bled easily she was not troubled with undue loss of blood in any other way, and even suffered from a scanty menstrual flow. The condition of the gums is, however, rather worse at the present time than before the onset of the jaundice, and no operative measures would be advisable now, even if it were found that the bleeding from the gums entirely ceased under the effect of calcium chloride in 10—20-grain doses three times a day. If the patient were quite incapacitated from her work it would be another matter, but as she is really only inconvenienced by the unpleasant colour of her skin and by occasionally feeling dizzy it is best to persevere for a time with medicinal treatment only. The clear history of the severe attack of typhoid fever eight years ago is interesting in view of the fact that during recent years much evidence has been produced to show that this fever is not uncommonly an exciting cause of an attack of cholecystitis, which, in its turn, may be followed, after the lapse of a longer or shorter period, by the development of symptoms which indicate that a gall-stone is present in the biliary system and trying to escape therefrom. It has been known for a long time that the gall-bladder may become the seat of the development of ulcers in typhoid fever, and that death may be caused by

rupture of this organ or by the inflammation about the ulcers extending to the peritoneum and exciting a general peritonitis. But it is only in comparatively recent years that enteric fever has come to be looked upon as a predisposing or actually exciting cause of the formation of gall-stones.—*Medical Chronicle, December*, 1896.

55.—PANCREATIC LITHIASIS.

By M. J. Nicolas.

At a recent meeting of the Société des sciences médicales de Lyon M. Joseph Nicolas presented some anatomical specimens obtained from a patient who had died in M. H. Mollière's service. A full account of the history of the case and of the autopsy will be found in the *Gazette hebdomadaire de médecine et de chirurgie* for February 11. The diagnosis was pancreatic lithiasis, suppurating pancreatic angeitis, and abscess of the pancreas, which broke into the duodenum. There was acute diabetes from pancreatic sclerosis, and death was caused by caseous pneumonia. This observation and the autopsy, says M. Nicolas, are interesting on account of the following points:—(1) Pancreatic lithiasis, without being rare, is not met with very frequently, and for this reason attention should be called to all cases in order to establish its symptomatology more exactly. (2) Pancreatic angeitis, to use Arnozan's expression, may be observed in pancreatic lithiasis, just as cholangeitis is seen in biliary lithiasis, or pyelonephritis in calculus of the kidneys, its pathology depending upon the same factors as these latter affections—obstruction of the excretory canals, retention of liquids above the obstruction, and ascending infection by the glandular canals, according to Nimier. Observations of suppurating pancreatic angeitis with abscess of the pancreas of lithiatic origin are rather rare. (3) Intestinal hemorrhages have been pointed out in the lithiasis by Elliotson and Ancelot, but in the present case the abundance of melænas was such that it was difficult to attribute to them a purely lithiatic origin. It is probable, in fact, that the hemorrhages observed in this case were not, properly speaking, of lithiatic origin, but started from the walls of the abscess or of the fistula, the former having been coincident with the opening of the abscess in the duodenum; what renders this hypothesis very probable is the fact of the simultaneous disappearance of the pains, which were probably caused by this opening, and, on the other hand, the traces of blood which were found in the purulent sac at the autopsy. (4) Authors who have studied the symptomatology of pancreatic

lithiasis group the principal symptoms of this affection as follows:—(*a*) Severe colic with violent epigastric pains, vomiting, and fever; (*b*) diabetes occurring some years later; (*c*) a peculiar diarrhœa which presents at least several analogies to pancreatic diarrhœa; (*d*) the presence of pancreatic calculi in the stools.

If the foregoing, says the author, is compared with the symptoms presented in this case, very little resemblance will be found. With the exception of the violent epigastric pains, everything was different. There was no vomiting or fever, except at the end, when the pancreas was in a complete state of suppuration; the fever, moreover, could be sufficiently explained by the presence of the tuberculous pneumonia. Steatorrhœa and diarrhœa were never present, but, on the contrary, there was obstinate constipation. Finally, if the stools had been examined for calculus, the results would certainly have been negative, as the calculi found in the canal were so thoroughly encysted that, even after Wirsung's canal was opened, they still adhered to the walls. Concerning the appearance of diabetes after an interval of several years, in this case that was far from being the case; in fact, the first symptoms of the disease appeared in the month of June, and it was not more than six months afterward that diabetes manifested itself and led to the patient's death in a few days by the rapid evolution of a tuberculous pneumonia.

This observation, says the author, aside from the interest presented by the clinical evolution and the examination of the specimens at the autopsy, explaining this evolution in all its details, may serve to show to how small an extent the symtomatology of pancreatic lithiasis has as yet been determined. Finally, it proves once more that the pathology of the pancreas is governed by the same laws as that of other glandular organs, notably in regard to the ascending infections through the excretory canals.—*New York Medical Journal, March* 6, 1897.

56.—PHANTOM TUMOUR.

By Archibald Donald, M.A., M.D., M.R.C.P.,
Obstetric Physician, Royal Infirmary, and Honorary Surgeon, St. Mary's Hospital, Manchester.

Phantom tumour and pseudocyesis are terms applied to conditions which are closely allied. The main characteristic of each is a swelling of the abdomen, which gives a tympanitic percussion note more or less clear, according to the thickness of the abdominal wall. At one time I was quite satisfied

with the purely hysterical theory of the disease, but some few years ago I met with a case which changed my views and led me to believe that—in a large number of instances at least—there were other and more important factors than hysteria in its production. Since then a careful observation of all the cases which have come under my notice has convinced me that they may be divided into several groups which are sufficiently distinct, from an etiological point of view, to justify this classification.

Before discussing the clinical varieties of phantom tumour it may be well to draw attention to the elements which compose the abdominal swelling. Of these we may distinguish three:—Accumulation of air or flatus in the intestine; unusual deposit of fat in the abdominal wall and omentum; and irregular contractions of the abdominal muscles. Sometimes one of these is most marked, and sometimes another—the second may be altogether absent; but we cannot for any useful purpose classify the cases from this standpoint. The size of the swelling varies within wide limits; it may be enormous, or it may be little more pronounced than is sometimes seen in cases of flatulent dyspepsia. In dividing cases of phantom tumour into the following five classes, I am quite aware that it is not always easy to draw a hard and fast line between them; it may sometimes be doubtful to which category an individual case belongs, or the etiology of a case may be complex. But I think the classification affords a good basis for the more careful study of the disease, and is of use from the point of view of treatment:—

(1) Phantom tumour associated with pelvic peritonitis. (2) Phantom tumour associated with the normal climacteric period. (3) Phantom tumour associated with a pathological menopause.—It is true that this group is allied to the type of case which we described at first, but it differs in this—that the abdominal distension does not appear, or is not a marked symptom, until the pelvic inflammation has led to atrophy of the ovaries. It is possible that both in this and in the preceding class of cases the abdominal distension is caused reflexly by the irritation of the sympathetic nerves produced by atrophic changes in the ovaries and uterus. In this group we must place a certain number of cases of pseudocyesis. In two of my own cases the patient attributed her symptoms to advanced pregnancy. (4) Phantom tumour in young women associated with amenorrhœa and rapid development of fat.—This group of cases is one of somewhat obscure origin. (5) Phantom tumour as a symptom of pure hysteria.—In all the preceding groups there is undoubtedly an element which cannot be fully explained. Even in Group 1, where there is evidence of well-marked organic

disease in the pelvis, it is difficult to understand why great abdominal distension should follow in only a very few of the many cases in which this organic mischief exists. There must be, in addition to a source of irritation, a peculiar idiosyncrasy in the patient, which may consist in an abnormal susceptibility of certain nerve ganglia. But the other, or exciting, factors in the production of phantom tumour in this group are so important, from a practical point of view, that we are justified in ignoring the nervous element. The same may be said of Groups 2 and 3, and possibly of Group 4. But after eliminating all these cases, we have still a class which must be ranked as purely hysterical. Whether this group will be diminished or abolished with advancing knowledge it is impossible to say.

The diagnosis of phantom tumour as a symptom is, as a rule, not a difficult matter. In the majority of cases it is not necessary to anæsthetise the patient. When distension is the chief feature, the drum-like percussion note is sufficient to show the nature of the swelling. Even when there is great increase in the abdominal fat or strong muscular spasm, the resistance may generally be overcome if we grasp a large extent of the abdominal wall between the fingers on one side and the thumb on the other, using both hands and exerting steady, deep pressure. This method also gives us an idea of the thickness of the abdominal walls. Another way of demonstrating the absence of any large tumour is to watch closely the abdomen while the patient raises herself from a horizontal to a sitting posture. The action of the recti muscles will then be very apparent in most cases, and the shape of the swelling is altered. When a large abdominal tumour is present no change in the shape of the swelling occurs during the change in position. It must be noted, however, that this test does not exclude ascites, and that it is not of much assistance when the abdomen is very fat. When we wish to make a more complete diagnosis, it will frequently be necessary to anæsthetise the patient. This measure is not advisable in the typical hysterical case, nor in cases which obviously belong to Group 4. In the less pronounced abdominal swelling following the menopause, and in cases of pseudocyesis occurring at this time, the history is generally sufficient to show the nature of the ailment. But when a patient who does not show marked evidence of hysteria, and who is not passing through the climacteric period, is the subject of phantom tumour, it is our duty to make sure that there is not also some organic pelvic or abdominal disease, and for this purpose an anæsthetic is usually necessary.

If the above classification of phantom tumour be accepted—even with more or less reservation—it follows that the line of treatment must vary with each particular class of case. The

battery and antispasmodic drugs, such as valerian and assa-fœtida, are to be reserved for the purely hysterical cases ; they are quite out of place in the treatment of phantom tumour due to other causes. If we find any organic lesion in the pelvis, our attention must be directed chiefly to that. If it is of an inflammatory nature, rest in bed will often suffice, but operative treatment may be required ; if there is a tumour, its removal may be advisable. When the symptoms are due to an exaggeration of the troubles incident to the menopause, soda and nux vomica are often of service, and when a patient at this time of life attributes these symptoms to pregnancy, her condition will nearly always be much improved if we can convince her that she is mistaken. For the cases classified under Group 4, I believe that careful attention to diet and regular exercise—with the object of reducing the patient's weight—are sometimes beneficial.—From Dr. Donald's paper in the *Practitioner*, *April*, 1897.

DISEASES OF THE URINARY ORGANS.

57.—HÆMATURIA FROM HEALTHY KIDNEYS.

By Professor G. Klemperer, Berlin.

The author first referred to the analogous hemorrhages from the healthy uterus and vicarious hemorrhages. Then there were hemorrhages from hysteria for which there was no pathological basis. He recalled the instance of a lady suffering from typhoid who had violent hemorrhage from the stomach. She died, and the post-mortem showed that the stomach was perfectly healthy. There was a second case of hysteria with hæmoptysis and hæmatemesis. The patient died the year after, and at the autopsy no cicatrices were found in the stomach, nor, in fact, any pathological change whatever. He also recalled the case published by Cohen, of violent hemorrhages in a hysterical patient that were cured by suggestion. Inversely, also, hemorrhages had been set up in healthy organs by suggestion. The bloody sweat of hysterical people was also to be borne in mind. In case of hemorrhage from the kidney, the kidney had been removed or cut down upon and found to be healthy. The cases observed by himself could be divided into two groups—acute and chronic. Of the acute cases there were two :—One that of an officer who had hæmaturia after a seven hours' ride, and the other that of a young man who had over-exerted himself on the cycle. The chronic cases

could also be divided into two groups—the hæmophile cases and the angio-neurotic. The first case of Group I. was that of a man, aged 36, who was admitted into the Charité in 1893. The mother, and brothers and sisters were all hæmophile. He had his first attack of hæmaturia in his sixteenth year; this was so profuse that he had to keep in bed for thirteen weeks. After keeping him in hospital for six or seven weeks, he was discharged, and had never had such a severe attack since. The second case was that of a man, aged 26, who was admitted in 1895. From his sixteenth year he had suffered from renal hemorrhages once or twice every year, this was sometimes accompanied by right-sided pain. As the hemorrhage continued eight or nine weeks and was no better, Leyden ordered cold affusion, whereupon the hemorrhage ceased and had not returned. There were two cases in the angio-neurotic group. The first was that of a young man, aged 22, of very nervous temperament. In his case the hemorrhage had lasted for weeks. The cystoscope showed that it came from the left kidney. On account of the extreme anæmia nephrectomy was performed. The kidney was perfectly sound. Probably nervous influences had caused dilatation of the vessels of the kidney with subsequent hemorrhage. The second case, that of a healthy-looking man, aged 37, was cured by hydro-therapeutic means.

The speaker claimed that his observations showed that renal hemorrhages should not be taken too seriously when after repeated careful examination nothing pathological could be discovered. At any rate no operation should be performed.

In the discussion following Klemperer's paper, Leyden agreed with the speaker. In one case a medical man came to him in great distress on account of sudden hæmaturia. After some days the bleeding ceased, and since then, six years ago, there had been no return. The bleeding was probably due to over exertion in walking. Mendelssohn had seen three cases of renal hemorrhage in healthy people. Nitze had seen a comparatively large number of cases of essential hæmaturia (he preferred to call it by that name as it did not prejudge anything). He had seen seven such cases. In all an operation was performed, four times nephrectomy, and three times nephrotomy. Complete recovery took place in all the cases. Where the bleeding could not be distinctly traced to over exertion one should be very careful as to its importance, as it might be due to not easily discovered changes in the parenchyma. He would rather operate than wait too long. In hæmophilia cases he would not cystoscope, as slight abrasions would make the hemorrhage worse. Moreover, these cases were not difficult to diagnose, and Klemperer had done right in not classing them as cases of

essential hæmaturia. Mankiewicz related the case of a very big one year's volunteer, weighing over 100 kgrm., who always had hæmaturia after violent military exercises, and who was dismissed as unfit for service on that account. His hæmaturia then ceased, and after the lapse of several years had not returned. Ewald had seen a case of hysterical hæmaturia, although such a diagnosis was very difficult to confirm. The blood disappeared, and in a few days returned again. Klemperer could not agree with Nitz that operation only made the diagnosis certain. Operation was not such a simple affair, however "simple" it might be called.—*Medical Press and Circular, December* 30, 1896.

58.—THE PROGNOSIS IN ALBUMINURIA.

By M. Talamon.

Talamon (*L'Union Med.*, No. 36, 1896) has collected in this work a number of observations and facts, each having its own individual interest and weight; and he points out that it is only after a broad consideration of these—their presence or absence, their associations, and their significance in any given case, that it is possible to give a judgment as to the pathological condition present. Abundant albumin, with permanent polyuria, is of bad augury. It points to an amyloid large white kidney; or to red atrophy, with a rapid course. A degree of albuminuria, varying in amount, but about ·5 per cent., and with a urine of otherwise nearly normal constitution, gives rise to no unfavourable prognosis for the time being, a due reserve being maintained as to future developments. If the urine is pale, of low density, wanting in organic constituents, a renal atrophy may be properly suspected. If, in the course of an acute nephritis, or in an acute phase of Bright's disease, the proportion of albumen is considerable, while at the same time the blood pressure is increased, it may be taken as certain that the glomerular inflammation is still in active evolution. In the intervals between acute phases a low proportion of albumen is the sign of a limited and nearly stationary lesion; on the other hand, a large amount indicates a rapidly progressive lesion. The formation, in the course of the cold nitric acid test, of a dense and defined ring of uric acid above the ring of albumen permits of the conclusion that the renal mischief is slight. It is observed in febrile conditions, cardiac troubles, and in the albuminuria which precedes gouty attacks. In pale urines of low specific gravity, nitric acid sometimes gives a dense cloud

of albumen, lying over a violet ring of indican, which quickly becomes diffused. This appearance is of evil aspect: it indicates advanced renal lesions and a profound affection of the general health. In other cases, pale urine of low density gives with nitric acid a similar ring of albumen, and below a pink ring of uro-hæmatin. This is well seen in cases of contracted kidney, in the albuminuria of the elderly, and in that of anæmic neurotic adolescents. As to the transitory, intermittent cyclical group of albuminuria included under the designation of functional, as not depending on any renal change, the attempt has been made to distinguish them by the daily fluctuations which occur in them in the percentage of albumen. This feature, however, is not conclusive; for similar variations are seen in certain cases of true Bright's disease. Intermittency implies a low proportion of albumen, and disappears when the quantity increases; as, for instance, during the course of an acute disease. Abundant albumen, in a pale urine of low specific gravity, and large in quantity, but poor in urea, and mineral acids, implies a grave prognosis. A low percentage, in a highly-coloured urine of normal specific gravity, rich in urea and uric acid, is, on the other hand, of favourable import. A diminution in the quantity of urine secreted is of unfavourable augury. Occurring in the course of chronic nephritis, and persisting in spite of adequate treatment, it heralds the onset of uræmia. The proportion of urea gives relatively few indications. It is a good sign if its elimination is up to the normal standard, and a falling off in this respect is unfavourable. It should not, however, be forgotten that a prolonged milk diet may of itself cause a lowered proportion of urea. Hyaline casts and blood corpuscles sometimes occur in normal urine. Their presence is not, therefore, a pathognomonic sign of organic lesions, as opposed to so-called functional albuminuria. Epithelial and hemorrhagic casts in any quantity, in an albuminous urine, indicate a severe diffuse lesion. The hyaline casts are numerous in the albuminuria due to venous stasis; they are very rare in contracted kidney. Waxy and granular casts are of bad prognosis; they are seen in large white kidney. In acute nephritis a "dead-leaf" colour of the urine is of more unfavourable import than a light-red tint. It is the latter which is most frequently seen in nephritis accompanying acute infectious diseases, which usually is cured. In chronic cases hemorrhage is unfavourable; it accompanies tubercular nephritis, renal cancer, or sub-acute Bright's disease with a fatal tendency. Albuminuria occurring for the first time in a person over 50 is always grave. It often implies advanced renal atrophy. Moreover, in advanced life renal lesions do not tend to improvement.

Cardiac hypertrophy and arterial sclerosis in the young subject indicate advanced disease. A certain degree of hypertrophy of the left heart is, however, beneficial, for it keeps up the blood pressure. A failure in this respect, with continued profuse albuminuria, leads to a grave prognosis.

As regards the phenomena of uræmia, certain of its minor manifestations—headache, auditory and visual disturbances, cramps, pruritus, &c.—are not necessarily of evil omen, unless they occur in the course of a chronic albuminuria, and with the signs of profound renal alterations. They occasionally accompany advanced mental weakness, and in the young, suffering from albuminuria preceding gout, may be regarded as not unfavourable in themselves.

In febrile albuminuria the prognosis depends, not on the quantity of albumen, but of water excreted. It is due to the disturbance of the innervation of the renal vaso-motor areas by toxines, and not to the elimination of micro-organisms.

Cardiac albuminuria is without a diagnostic importance *per se;* neither does it aggravate the original disease. If, however, it persists after the disappearance of a phase of asystole it implies a co-existing renal trouble, and is of serious moment. In aortic disease, persistent excretion of albumen may indicate either a rapid enfeeblement of cardiac muscle or a serious renal mischief. Renal embolism may lead to albuminuria and hemorrhage.

Diabetic albuminuria may be the result of concomitant gout, and of cardiac or tubercular complications. Where the gouty tendency is made out, the prognosis as to the diabetes is thereby more favourable, as indicating the least fatal variety of that malady. But the substitution of albumen for sugar is unfavourable. Albuminuria in pregnancy depends on an antecedent or inter-current nephritis. Its prognosis is variable. If the proportion of albumen does not exceed one gramme per litre, the urine being otherwise normal, the outlook is relatively favourable, at least for the first six months of gestation. A proportion of albumen beyond 2 per cent., with scanty urine containing blood and accompanying anasarca, is unfavourable in the extreme. Chronic nephritis may remain as a result of the disturbance induced during pregnancy.

Eclampsia is due to an intoxication independent of any renal lesion. The albuminuria accompanying or succeeding it is of nervous origin, and its prognosis is in relation to that of the eclampsia itself. Postpartum puerperal albuminuria is of the febrile infectious kind: and its prognosis in no way differs from that of the class to which it belongs.

In syphilis, albumen appears in slight or serious forms of nephritis, from the secondary period onwards. Some are

amenable to specific treatment; others persist, and are rapidly fatal. The so-called "albuminuria minima" (or functional) may belong to any variety. It has usually a favourable prognosis, especially in the young. In the old a greater doubt exists, but it by no means always depends on renal atrophy, but often on a general atheroma. In all cases it may prove to be the first stage of Bright's disease.—*Quarterly Medical Journal, January*, 1897.

59.—ON THE TREATMENT OF BRIGHT'S DISEASE.

By Harry Campbell, M.D., F.R.C.P.,
Physician to the North-West London Hospital and to the West-End Hospital for Nervous Diseases.

In considering the treatment of nephritis it is well to remember that it rarely, in its acute form, begins suddenly. Even in the scarlatinal variety the appearance of albumen in the urine is preceded by a period of high arterial tension; while in acute nephritis of independent origin there is always a premonitory stage of ill-health. I have never known it to suddenly attack a person in robust health. The like is true of the less acute forms. In the large white kidney which originates independently of acute nephritis, for instance, we never fail to get a history of prolonged ill-health prior to the development of the disease in unmistakable form. Finally, in granular kidney, the onset is so gradual that it is quite impossible to fix upon its actual date. The therapeutic importance of bearing these facts in mind needs no insistence. Too often our aid is not sought until the kidneys have undergone advanced structural change. Take the case of scarlatinal nephritis. If we adopt the practice of keeping scarlatinal patients—no matter how well they may feel—warm in bed for two or three weeks, on a milk diet, we reduce the percentage of nephritis in a remarkable degree. In this way not only do we frequently avert a threatening outbreak of the disease, but often succeed in nipping the bud of the actual disease. Again it is during that period of defective ill-health which heralds the advent of the more chronic forms of parenchymatous nephritis that our treatment should be begun, and not when the kidneys have already suffered serious organic change.

Let us suppose that we have been fortunate enough to detect a case of chronic parenchymatous nephritis, or granular kidney, in its premonitory stage, or during an early period of its development. How should we proceed in treatment? (1) We enjoin rest. There is no form of nephritis in which active

exercise is beneficial. Nothing better shows this than the influence of rest in diminishing albuminuria. Rest is also beneficial in saving the heart, which, in most cases of Bright's disease, is put to extra work. Indeed, the length of life in granular kidney is largely determined by the length of time the heart can hold out against the increased peripheral resistance. (2) We keep the skin in action, and the best way of doing this is to send the patient to a warm dry climate. In this way the work of the kidneys is greatly diminished. (3) The bowels are kept freely open. The work of the kidneys is thereby saved, and also that of the heart, for constipation tends to increase peripheral resistance. (4) We order a diet as non-nitrogenous as possible, and as easily digestible. This latter is a great desideratum, for we are beginning to dimly see that nephritis does not originate in the kidneys—that it may originate in some error in metabolism leading to defective blood elaboration, in consequence of which the kidneys suffer; and if such is the case the importance of securing complete gastric and intestinal digestion is evident. (5) Alcohol is strictly prohibited. If we rigidly enforce this treatment in the premonitory or early stages of chronic parenchymatous nephritis, we can, in practically all cases, avert or cure the disease. Whether this remark applies to granular kidney is more doubtful, for it never comes under treatment until it is well advanced. There can be little doubt, however, that by adopting the methods described, we may slacken its progress and considerably prolong life.

I have referred to the importance of saving the heart in nephritis. The condition of the circulation should be carefully watched in this disease. Sir William Broadbent has suggested that cases in which arterial tension is high, do better than those in which it is low. Such has been my experience. The uræmia of granular kidney is frequently traceable to cardiac breakdown. So long as the circulation through the damaged kidneys is active it may carry on its work of excretion fairly well, but directly the restricted renal area fails to be well flushed with blood, the excretion of uria falls dangerously low. Hence the vast importance of guarding against cardiac failure in these cases. There are three great causes of such failure :—(*a*) worry, which acts chiefly by disturbing the innervation of the heart, such disturbance being a serious matter when this organ has come to the limit of its reserve power; (*b*) violent muscle exertion; (*c*) bronchitis, which by interfering with the pulmonary flow, tends to slacken the entire circulation. When the heart has thus suddenly struck, and in those cases in which arterial tension has been habitually low (and these latter are not rare in the more chronic forms of parenchymatous nephritis), we may often do good with digitalis and strychnine. I have also found great

benefit from respiratory exercises in promoting the circulation, and in postponing the advent of fatal dilatation. The patient should spend five minutes every hour in taking the deepest possible breaths. This not only favours the flow of blood through the lungs, but indirectly also the systemic circulation, by increasing the output of the left ventricle and relaxing the smaller systemic arterioles. The efficacy of iron in nephritis requires investigation; while in some cases it may benefit, in others it does harm. An eminent physician recently informed me that he had observed distinct improvement of health follow the abandonment of this drug, in cases of Bright's disease.—*Treatment, April* 22, 1897.

60.—URÆMIC DYSPNŒA.

By Nestor Tirard, M.D. Lond., F.R.C.P.,
Physician to King's College Hospital and to the Evelina Hospital for Sick Children.

[The following is taken from Dr. Tirard's paper. The cases and other parts have been omitted.]

The employment of the term "uræmic asthma" has probably caused much confusion, since it appears to group under one heading a variety of different types of uræmic dyspnœa, and it seems to offer but a single explanation for their pathology. The forms of dyspnœa which may be met with in uræmia have been enumerated as (1) continuous dyspnœa, (2) paroxysmal dyspnœa, (3) both types alternating, and (4) Cheyne-Stokes breathing. To these Saundby adds a form described by Lecorché as laryngeal, in which the respiration is noisy and sibilant as in croup, attributed to spasm of the laryngeal muscles. The form which is much more commonly met with is that associated with dropsical changes, whether these lead to œdema of the lung or to the accumulation of fluid within the pleural cavity. Certainly the variety of uræmic dyspnœa which has most prominently come under my observation is that in which these changes have existed, and Saundby quotes numerous cases in which the paroxysmal dyspnœa has preceded the fatal ending of the case by but a short time only. Both of these varieties appear to simulate the symptoms due to true spasmodic asthma. In both the difficulty of breathing commences usually at night, and the patient sits up in bed, struggling for breath for many hours. Sometimes the respirations are accompanied by sibilant *râles*, which are apparently the result of bronchial spasm. At other times, although the breathing is equally hurried and laborious, it is accompanied

by loud puerile respiration over the lungs. When dyspnœa is associated with œdema of the lungs, although the attack may commence suddenly and may to a large extent pass off after a few hours of intense distress, yet the respirations continue to be more rapid than in the normal condition, indicating that there is some permanent interference with the work of respiration. Sir George Johnson considered, no doubt correctly, that in some cases anæmia was the true cause of dyspnœa; but this, although explaining to a certain extent the shortness of breath on exertion from which so many of these patients suffer, would in no way account for spasmodic or paroxysmal attacks of dyspnœa. Another cause which has been assigned to some of these cases is the dilated and weakened state of the heart; but in this form, as in the last, the dyspnœa is excited mainly by exercise, very little distress of breathing being experienced if the patient is sufficiently ill to be kept quiescent; in fact, this form of dyspnœa, although it may be associated with cases of chronic kidney disease, is more strictly to be regarded as a symptom of chronic vascular changes than as a symptom of uræmic trouble.

As the causes are various, so the treatment must be that naturally suggested by a consideration of the stage of the disease and of the associated symptoms. The limitations of the use of nitrite of amyl were fairly established by Dr. Solomon Smith in an interesting paper in the *British Medical Journal* of June 9, 1883, in which he classified four varieties of uræmic dyspnœa, and stated that he had found nitrite of amyl most valuable where the dyspnœa was associated with degeneration of the cardiac muscle. Saundby considers that nitro-glycerine and nitrite of amyl afford some relief, but I must confess that in the cases in which I have employed them, the results have been somewhat disappointing. Leech has suggested the employment of ethyl nitrite, and cobalto-nitrite of potassium has also been mentioned. All of these seem to have been recommended to a certain extent owing to this power of producing relaxation of involuntary muscle; but in the cases in which I have employed them I have not felt that any permanent relief was afforded, and I am inclined to agree with Dr. Saundby when he says that uræmic asthma is not at all amenable to treatment. Dr. Carter of Liverpool recommends the use of ozonic ether, and in those forms of uræmic dyspnœa where the condition is associated with œdema or chronic bronchitic changes, ether in some form has in my hands given satisfaction. Dr. Carter also recommends the use of inhalations of oxygen, and these again would appear to be most applicable to cases where the dyspnœa is due to consecutive lung trouble rather than to a transitory paroxysmal

condition. Some cases appear to do well with the ordinary treatment of uræmia—that is, with the warm pack, with digitalis, with acid tartrate of potash, or other measures calculated either to promote the action of the skin or to exert a purgative or diuretic influence. In one case much relief was obtained from the use of digitalis and caffeine, the dyspnœa passing off as the diuretic influence of these drugs became obvious ; and in this case still further improvement resulted from the use of diuretin, which prompted a more copious flow of urine and produced marked diminution in the œdema both of the extremities and of the lungs. It must be remembered that the most troublesome cases of uræmic dyspnœa occur towards the termination of chronic kidney disease, and the possibility of some cases being due to paroxysmal pulmonary œdema has been advanced by Professor Bouvret. In the *Year Book of Treatment*, 1892, p. 161, he recommends the employment of alcohol in large doses, hydragogue purges, poulticing the thorax, dry-cupping, bleeding, and in urgent cases the subcutaneous injection of caffeine and ether. In the case above-mentioned, although some relief of the continuous dyspnœa resulted from aspiration of the thorax, the paroxysmal dyspnœa was only diminished by the temporary re-establishment of the renal function.—*Practitioner*, *December*, 1896.

61.—THE SIGNIFICANCE OF RENAL PAIN.

[The following is taken from a leader in the *Medical News*, January 23, 1897 :]

Pain in the neighbourhood of the kidney is often very severe, and exists as the chief symptom of many abnormal conditions in this organ. Very often an examination of the urine passed at a time closely associated with the attack will reveal pus, an excess of irritating crystals, or other evidence of renal mischief, as blood ; but in other cases the urine gives far less guidance in diagnosis than could be desired. Of course, renal colic due to the passage of a calculus from the pelvis of the kidney through the ureter, will suggest itself as the most probable cause of the attack. The history of previous attacks of a similar character, the radiation of the pain downward into the groin and testicle, or to the end of the penis, aid in deciding that a calculus is passing ; while the possible presence of blood in the urine, the irritable bladder and the exquisite agony in the paroxysm, in contrast to the remissions, and the sudden onset, still further point to this condition. These symptoms are not, however, always present in sufficient degree or in association to make the

diagnosis easy, and the absence of one prominent sign may seriously impair its certainty. Under these circumstances, the physician at once endeavours to ascertain the other states of the renal neighbourhood, and recalls the fact that somewhat similar pains arise from pyelitis with possible nephritic abscess, from neuralgia of the kidney or the tissues near by, from nerve pains due to spinal caries or irritation, and more rarely from tumours adjacent to or in the gland, or from aneurism of vessels, as for example, aneurism of one of the branches of the mesenteric artery. Nor are these all, for, as additional possibilities, a stone or stones embedded in the renal substance may be found, or excessive deposits of oxalic acid or other crystals, manifesting themselves in gouty kidney, or, finally, cardiac valvular disease, more commonly of the aortic valves; while the aching of the kidney is ascribed to injury, and is most commonly met with in young females who endeavour while wearing corsets to take violent physical exercise.

The presence of pyelitis rarely developes great pain, and the appearances of the urine point clearly to the cause of the discomfort, though if the attacks be sudden in onset the cause may be calculus in the pelvis of the kidney, surrounded by septic changes. The failure of health and the possible febrile movements and chills still further point to pyelitis. So, too, nephritic abscess is accompanied by so much systemic disturbance in many cases as to make the diagnosis clear. The presence of spinal tenderness on pressure or motion in the dorsal or lumbar regions, and the history of spinal irritation or disease, decides this as the cause of the pain; but the discovery of aneurism of any of the abdominal vessels may be impossible, unless it be large enough to manifest itself through the viscera or abdominal wall on palpation. The diagnosis of stone embedded in the kidney is very difficult and uncertain, but the onset of an attack of renal pain arising from oxaluria or an attack of gout is usually bilateral, and is associated with a scanty urine of high specific gravity, and with much lumbar soreness. A gouty history or that of having eaten large amounts of oxalic acid-bearing foods, such as pears, tomatoes and cabbage, may be recognised as the predisposing causes of attack.

Nearly forty years ago, Habershon called attention to the fact that aortic valvular disease often caused pain to be radiated into the hypochondrium, and within the last year, Ralfe has, in the Proceedings of the Medical Society of London, detailed the possibility of aching kidney being due to unrecognised trauma. He has met with young women who, by wearing tight corsets while playing tennis or other violent games, have so bruised the right kidney by some sudden and violent movement as to suffer seriously for days afterward. Again, Ralfe asserts that fairly

violent renal pain sometimes arises in cases that, by reason of obstinate constipation, have accumulated in the colon hard scybalous masses which, by their pressure, produce reflex irritation and renal agony.

In a similar paper read by Hurry Fenwick, he asserts that there are two great groups of renal stones, and that in each class characteristic pain may be felt. In the cortical stones the pain is fixed and continuous, and is liable to exacerbation on movement, but does not depend so much upon changes in the diet. On the other hand, pelvic stones cause obstruction and colic, the pain radiating down into the groin and testicle, while the urine becomes bloody, purulent, or scanty. Of course these cases are not in life divided by any strict line such as we have named; the more cortical the more characteristic the pain, whereas if lower down there may be the symptoms usually seen when the stone is actually pelvic. Fenwick also believes that the posture of the patient in bed is typical. In nine out of twelve cases, his patients could sleep only on the affected side. Cortical stones, in his opinion, never cease to give discomfort, but pelvic stones may become embedded, and the patient go for long periods of time free from any discomfort.

62.—ALIMENTARY GLYCOSURIA AND DIABETES MELLITUS.

By Professor A. Strümpell.

It has been demonstrated by a number of observers that glycosuria can be produced in a healthy man by giving a large quantity of glucose early in the morning, the stomach being empty. The quantity of glucose necessary to produce this effect varies a little in different individuals—from 150 to 200 grammes. It is necessary that this quantity be given all at once. The urine should be passed and examined every hour for sugar. The occurrence of this so-called alimentary glycosuria depends not only on the quantity of glucose taken, but also on the rapidity of absorption. For example, in a case examined by Professor Strümpell 150 grammes of glucose given all at once on an empty stomach caused distinct glycosuria, but when the same quantity was divided into three portions, and taken separately in the course of an hour, it did not produce any glycosuria. The author has made a number of observations in various abnormal conditions in order to ascertain whether in those conditions glycosuria could be produced with smaller quantities of sugar than in health. In cases of marasmus, anæmia, cirrhosis of the liver, progressive muscular atrophy,

arterio-sclerosis, no diminished power of sugar destruction could be detected—*i.e.*, glycosuria was not produced more readily than in health. But in cases of neurasthenia, or traumatic neurosis, there was a diminished power of sugar destruction, and glycosuria could be induced more readily than in health. In many, but not in all, cases of chronic alcoholism, or, more correctly, in cases of habitual drinkers of large quantities of beer, Strümpell found that glycosuria could be readily induced by 100, 75, or even 50 grammes of grape sugar. The same condition the author discovered in some cases after the drinking of an excessive quantity of beer ($1\frac{1}{2}$–2 litres) rapidly. Alimentary glycosuria does not occur in all great beer drinkers—individual peculiarity plays a great part.

The author points out that these excessive beer drinkers often drink 5 to 8 or 10 litres of beer daily, and thereby 250 to 400 or 500 grammes of carbohydrates in a soluble form, besides 150 to 260 or 300 grammes of alcohol and other nourishment, is absorbed into the system, and that there is no wonder that in consequence the sugar-destroying powers of the system become impaired.

The author adds some remarks respecting the etiology of diabetes. The cause of disease may be divided into two classes—exogenous and endogenous. Diseases of endogenous origin are dependent on some developmental abnormality—a congenital defect of the organism—in consequence of which disease arises apart from any external cause. Often there is a combination of endogenous and exogenous factors in the production of disease. With respect to diabetes mellitus, Strümpell points out that a number of cases are entirely, or almost entirely, of endogenous origin. These are cases of the severe form of diabetes occurring in young adults between the ages of 30 and 35 years—cases which resist all treatment, rapidly waste, and in a short time terminate fatally. In these cases often the most careful history does not reveal any exciting cause. The author refers to a case of spinal muscular atrophy combined with diabetes, and also to the combination of acromegaly with diabetes.

Many cases of diabetes, however, are due to exogenous causes, such as injury, mental strain and excitement, acute disease, syphilis, &c. Strümpell specially points out that he has frequently met with diabetes in persons who have been great beer drinkers. Often these were cases of "diabetes with obesity"; of slight forms of disease; but sometimes severe forms, complicated with gangrene and tuberculosis of the lungs. Frequently these cases of diabetes have been complicated with other results of alcoholism—alcoholic neuritis, chronic nephritis, &c. Strongly in favour of the view of a "beer diabetes" are

the results of the author's observations on alimentary glycosuria in great beer drinkers. No sharp line can be drawn between alimentary glycosuria and diabetes. At first, as a result of excessive beer drinking, the sugar-destroying function of the system is weakened, and alimentary glycosuria results later; at a later date the sugar-destroying function is lost, and permanent diabetes follows.

Strümpell believes that it is excessive beer drinking, rather than simple alcoholism, which is the cause of certain cases of diabetes. Whilst the author thus believes that some cases of diabetes are due to excessive drinking, he adds a word of caution, and points out that he does not wish it to be understood that he regards alcoholism as the cause of all cases of diabetes in persons who are not total abstainers.—*Berl. klin. Woch.*, *No.* 46, 1896. Abstract by Dr. Williamson in the *Medical Chronicle*, *January*, 1897.

Surgery.

GENERAL SURGERY AND THERAPEUTICS.

63.—NOTES ON THE PREPARATORY TREATMENT OF PATIENTS SUBJECTED TO ANÆSTHESIA.

By J. W. Silk, M.D. Lond.,
Anæsthetist and Instructor in Anæsthetics at King's College Hospital.

It is unwise, perhaps, to administer nitrous oxide immediately after a meal, or with the head in such a position as to allow the tongue to fall backwards over the glottis, but with these exceptions the gas can practically be given off-hand, without subjecting the patient to any previous preparation other than that usually adopted to ensure free respiration. With regard to the other substances (ether, chloroform, &c.), more attention than is usually bestowed upon preliminaries will materially increase the comfort of all concerned—patient, operator, anæsthetist, nurse—and it is hardly too much to say that a patient's life has occasionally been placed in jeopardy by the unintentional neglect of some simple precaution. As a general rule the anæsthetic is always taken better if the patient has been subjected for a brief period to what may be termed "hospital *régime*." This does not of necessity mean absolute confinement to bed, but it does mean rest of body and mind, careful regulation of the ordinary bodily functions, light and easily digested diet, abstention from alcohol, &c. Obviously, it is not always possible, or even advisable, to submit the patient to such restraint, *e.g.*, in emergencies, in the highly neurotic, or in young children; but such patients often give more or less trouble under an anæsthetic, and so confirm the value of the general rule. From time to time suggestions are made that a course of some particular drug, such as strychnine, quinine, iron, &c., is a sure safeguard against many of the difficulties and dangers which may arise during the inhalation of an anæsthetic. The tonic properties of such substances are of course of value, but it has not yet been proved that any of the substances recommended have what is usually termed a "specific action" in the matter.

Attention to the condition of the gastro-intestinal system is of great importance. The standing order in many hospitals that a patient should have a purge the evening before an operation is excellent, but, unfortunately, this detail is apt to be overlooked in private cases. Of greater consequence, perhaps, is the axiom which insists upon an empty stomach ; but starvation may be, and often is, carried a great deal too far, especially in the feeble. The difficulty is to choose a medium course ; on the one hand digestion may be retarded from sheer nervousness, and, on the other hand, the operation may be such as to severely tax the recuperative resources of the most robust. In ordinary cases the best plan is to give a cup of hot broth, beef-tea, or some such light liquid food not longer than three or four hours before the operation, but milk and other slowly digesting substances are to be avoided. In cases of special gravity, whether from the condition of the patient, or having regard to the probable severity of the operation, it will be found useful to give, when possible, a nutrient enema (yelk of one egg, one ounce each of beef-tea, milk, and brandy—peptonised if necessary) half an hour before the patient is placed upon the table. If this is done, care must be taken to wash out the rectum with warm water before injecting the enema. Physiologically and clinically considered, the use of brandy by the mouth is irrational; it may become necessary, however, in cases of impending syncope from fright, and possibly in some few instances its administration may have a good moral effect upon the patient, but, as a general rule, it is certainly not a desirable proceeding.

Hypodermic medication immediately before the inhalation is commenced has been advised ; the drugs used being morphine, atropine, strychnine, digitaline, &c. The idea is partly that of assisting the action of the anæsthetic, and partly to counteract possible ill-effects. The routine use of morphine is deprecated by most anæsthetists and others whose opinions upon the subject are worth having; its advantages are illusory, and its tendency to mask the symptoms of over-narcosis has more than once led to fatal results. Something may perhaps be said in favour of the employment of morphine in such special operations as those involving the cerebral hemispheres, when its action in contracting the vessels may be of service in helping to keep the parts anæmic. There seems to be some reason for believing that strychnine is of considerable value in obviating and diminishing what may be termed "operation shock," and it is also claimed by some that the tendency to sickness is lessened by its use. In the feeble, therefore, and in severe operations one-fifty gr. may be injected immediately after anæsthesia has been induced, and the dose may be repeated towards the end of the operation, or oftener if necessary. This can do no harm and may do a good deal of good.

As regards the position of the patient, the best rule to adopt is to accept the position assumed by the patient as being most convenient and comfortable to himself. In the majority of cases this will be supine, with the head and shoulders well supported by pillows; in exceptional cases, *e.g.*, empyæma, the patient may prefer to be on his side, and the administrator must adapt himself accordingly. It is hardly necessary to point out that the administration of chloroform to a patient in the sitting position, as in a dental chair, is a proceeding which is quite unjustifiable; nor is it necessary to insist that whatever position is adopted the greatest possible respiratory freedom must be ensured, and that everything in the shape of belts, stays, &c., that may tend to obstruct the breathing, must be removed.—*Treatment*, *March* 23, 1897.

64.—SOME IMPORTANT FACTS ABOUT CHLOROFORM.

By H. A. Hare, M.D.,
Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia.

As with other discussions in medicine, the truth of the question as to whether chloroform causes death by respiratory failure or cardiac failure lies, as it were, half-way between the two antagonistic forces; and, further than this, the somewhat startling statement may be made that it is not directly due, in the majority of cases, to either of these causes. On the contrary, the cause of death from chloroform is usually vaso-motor depression, whereby the arterioles allow the blood to pass too freely into the great bloodvessel areas which are found in the capillaries and veins, and as a result the man is suddenly bled into his own vessels as effectually as if into a bowl. When it is remembered that the capillary network of the body will, with the relaxed veins, hold many times the normal quantity of blood, and when it is remembered that we can inject salt solutions into the vessels to the extent of several times the normal quantity of blood without raising the blood-pressure, it at once becomes evident that the complete vascular relaxation caused by chloroform results in failure of all the vital functions, not because the drug has paralysed the heart or respiratory centre, but because these parts are deprived of blood by its stagnation in the widely dilated capillaries and abdominal veins. Recent studies by Leonard Hill on "The Physiology and Pathology of the Cerebral Circulation" showed that this was the case, for he asserts that when the blood was no longer flowing to the

respiratory centres the heart was still beating, because its coronary arteries, being lower down, were more easily supplied by the small blood-stream received by the heart from the veins. These studies are proved by the experiments of myself and my assistant, Dr. Thornton (*Therapeutic Gazette*, October, 1893), by every tracing of the Hyderabad Commissions, and all other tracings we have ever seen. We may conclude, therefore, that while chloroform without doubt acts as a powerful depressant poison to the respiratory centre and the heart, in the same manner as it paralyses all living protoplasm when applied in excess, that when properly given by inhalation it produces a death equivalent to that resulting from hemorrhage, which is a failure of the respiration not so much from a direct depression of the respiratory centre as from its starvation of blood; and while the tendency of the drug is to depress and dilate the heart, just as it dilates the vessels of which the heart is merely a highly specialised part, the failure in the pulse rests upon vaso-motor palsy, the patient becoming pulseless because the heart has not any blood to pump.

Let us see what evidence supports this view :—First, we have the laboratory tracings of many independent investigators extending over many years and made in all parts of the world, all of which show a fall of blood-pressure. Among these may be named Bowditch and Minot of Boston, Coats, H. C. Wood, Gaskell and Shore, the Hyderabad Chloroform Commissions, the studies of Wood and myself in 1889 and 1890, and of myself and Thornton in 1892 and 1893. They are confirmed by Hill, who has seen the abdominal vessels engorged with blood under chloroform, the medulla almost bloodless, and the heart still pumping though respiration had ceased. They are confirmed by my own experiments, in which I proved that even after the respiration had stopped and the carotid was empty, and the dog apparently dead, he could be resuscitated by visceral compression and artificial respiration, and by inversion whereby the blood left the dilated abdominal veins for the heart and brain. Again, if a needle was inserted through the chest-wall the heart was found to be beating, for the needle moved to and fro; and, finally, if the chest was opened the heart could still be found beating feebly—dilated, it is true, but beating.

So much for the laboratory evidence. What have we in clinical evidence? Equally positive proofs of vaso-motor palsy and none of death being purely cardiac or respiratory. For years Chisholm of Baltimore and later Howard Kelly and a large number of others have used inversion with compression of the floating ribs in artificial respiration, which has forced the blood into the chest and saved life again and again. For years

the literature of medicine has teemed with reports of death from chloroform while the patient was sitting up or half recumbent, because the blood-paths being dilated this posture favoured anæmia of the vital centres. Again, it has been proved, both experimentally and clinically, that the best vaso-motor stimulant—belladonna or atropine—given before the chloroform, increases its safety, and that compression of the limbs by bandages does likewise. Finally, Hill has shown that abdominal compression also produces resuscitation by sending the blood to the heart. On the contrary, saline transfusion, which at first glance would seem to be indicated, is useless, because the dilated blood-paths will receive all the saline for a long time before they will overflow towards the heart, for as fast as the fluid flows in they dilate.

My conclusions, therefore, are that while chloroform in its general depressing power depresses all vital functions, it is the question of blood-pressure which is most important, and therefore in the use of chloroform we should always keep the head low, precede the use of chloroform by atropine hypodermically, bandage the limbs if the case is feeble or already bloodless, and, if necessary, place compresses on the belly and apply them deeply by pressure if a failing circulation is developed. The primary action of the chloroform is to depress the blood-pressure chiefly by its vaso-motor effect; secondly, by its cardiac effect; and, finally, that while the drug does exercise a depressant effect on the respiratory centre, the failure of this centre is chiefly due to anæmia. As, however, an intact respiratory centre means regular breathing, we watch this function to determine the dose of chloroform actually inhaled, and because any variation in this function, as shown in irregular breathing, means that the chloroform is disordering arterial tension. Death from chloroform, then, is usually a vaso-motor death, for an intact arterial system is as important to vital function as an intact cardiac apparatus.—From Dr. Hare's article in the *Therapeutic Gazette*, *February* 15, 1897.

65.—FETICH WORSHIP IN ASEPTIC SURGERY.

By William Mitchell Banks,
Surgeon to the Liverpool Royal Infirmary, &c.

[We should have given verbatim Mr. Banks' interesting paper if demands on space had not prevented it. To prevent misconception we quote part of Mr. Banks' concluding sentence at once. "In what I have said let it be remembered that I reject nothing that really conduces to true surgical cleanliness.

I merely wish to point out the foolishness of laying great stress upon minor points, to the neglect of major ones. It is a pity to see silly mummery introduced into the splendid scheme of Listerism."]

It constantly happens that, being in want of an instrument during an operation, I call for it. A nurse or dresser at once procures it, but, before handing it to me, gives it a whisk through the carbolic solution in which the other instruments are lying immersed. It must be obvious that, if the instrument be dirty and aseptic, this farce of disinfecting it is mere superstition ; while, if it is genuinely clean, there is no occasion for the performance at all. Again, at the present moment there is a good deal of fetichism abroad about instrument-cases.

From a great absence of cleanliness the pendulum has now swung to the opposite extreme, with the result that foolish works of supererogation are done in order to secure the supposed highest pitch of surgical cleanliness. The peoples of the Continent do not, in my opinion, possess the quiet judgment and mental balance of the Englishman. It is very much with their medicine as it is with their politics. The *juste milieu* is unknown to them. As Americans say, they "go the whole hog or none." And so there is now no extravagance in the matter of antiseptics which they will not entertain. I am quite willing to admit that for many years the Continentals have far surpassed us in physiology and pathology ; but I maintain that, for a useful knowledge of his profession such as makes for the curing of sick folk, there is no doctor like the English doctor. I have heard of hospitals where sterilised air is blown into the operating theatre, and others where glass boxes have been devised in the interior, wherein the operations were done by a kind of *sacer vates* who had been previously shaved, washed, and endued with special vestments. Doubtless many things are told to the marines, but there is enough truth in all this to show that a lot of nonsense is being perpetrated in the sacred name of Listerism.

Now, no sane person will deny that it is better to err on the side of cleanliness than to be dirty. But, unfortunately, there is danger in so erring, inasmuch as many persons, who are easily fascinated by display and mystery, are thereby induced to attach an exaggerated importance to matters that are really of little moment, to the neglect of more prosaic but much more important details. The "whited sepulchre" in surgery is a fatal thing. In the matter of instruments, for instance, I fully recognise danger from imperfect cleansing of them. But the danger lies almost entirely with those instruments that possess teeth and hinges. The real way to remove this danger is not to fuss about the nature of the material upon which

these instruments lie in their case, but to do away with teeth and hinges. Among toothed and hinged instruments compression forceps are probably used more frequently and in greater number than any others; so a practical Englishman, Mr. Greig Smith of Bristol, has just brought out a compression forceps without teeth and with the usual arrangement by which blades can be separated, so as to admit of complete cleansing by boiling. And, talking of boiling, not long ago all sorts of expensive machines were made for sterilising instruments, and quite an amount of ingenuity expended over them, when all that is wanted is a fish-kettle, to be had for 4s. 6d., drainer included. All this time much indifference is being shown to a very dangerous instrument—the apparently harmless soft catheter. I am certain I have seen many an attack of cystitis brought on by its use; and in the case of an old and feeble man, if this supervenes upon an acute stoppage from prostatic disease, his life is endangered. Looking back upon cases which occurred to me in the olden days, I can distinctly see where my soft catheter wrought mischief, and the manner in which it did it is abundantly clear to me now. It was not properly cleaned.

Aseptic hands are naturally the most dangerous things of all, and it is curious to note how the maintenance of fresh wounds in an aseptic condition has gradually fined itself down to little more than clean hands. Soap and the nail-brush are the modern surgeon's greatest allies. But while a surgeon may make sure of his own hands, can he always make sure of those of his assistant-surgeon or house-surgeon who are probably helping him? Has the house-surgeon been dabbling in the morning with dirty contused wounds and sore legs in the out-patient department? In hospitals where very young house-surgeons are constantly succeeding each other, it is most difficult always to make sure that each and every man is both conscientious and careful in abstaining from handling aseptic patients. And yet all the glass shelves and hoses and topboots are of none avail against the danger imported by one dirty hand. Again, what about beds and bedding? I am certain that these are not sufficiently looked after by surgeons. The whole course of things shows that abdominal operations will in future be undertaken by general surgeons in general wards. But in such an event there will of necessity be dangerous patients in the ward. I do not see, for instance, how we are to do away with bad burns and urinary cases. Many of these latter are dribbling away in their beds for weeks. How does the surgeon know that the sheets and blankets of such a case have been rendered surgically clean before being put under a fresh patient with a bad compound fracture? Probably he believes that there is a thing called a disinfector in the hospital, but how

many surgeons will be able to say that they know all about their disinfector, and whether it really disinfects or not? I constantly look at the bedding and make a journey to the disinfector to see that I am not trusting to a sham. Again, it seems to me that no sepsis can be conveyed by solid instruments which can equal in amount or intensity that which can be conveyed by sponges. From the moment the discovery was made of how to make an absorbent cotton-wool, I abandoned sponges in hospital work. As for sponges in private practice, I see no reason why a surgeon should keep a stock. I always ask the doctor or nurse attending the patient to see that on the night preceding an operation six new surgical sponges shall be bought, thoroughly washed clean of all grit, and soaked overnight in 1 in 20 carbolic solution. For wounds in the groin, the neck, and the axilla, there is no first dressing equal to a couple of these sponges.

Turning to private practice specially, what momentous interests hinge upon the sanitary condition of the house in which a serious operation involving a large wound is to be performed. Of what avail are all our precautions at the operation if we have forgotten to see about the drains in the house? I have followed out every phase of Listerism, from the carbolic-putty and lac-plaster days down to the present day. After this not inconsiderable experience, I am glad to say that the exercise of a certain amount of common-sense combined with a strong infusion of incredulity, has prevented me from too rapidly adopting plans which I should only have had to change, or giving vent to statements which I should only have had to recant. While innumerable microbe-destroying solutions were being invented, I stuck steadily to carbolic acid, taking note of the fact that no sooner was some substance brought out which was warranted to slay the bacterium without fail, than it was discovered that this was all wrong, and that it was meat and drink and clothing also to the bacterium. When, at the end of many years, Sir Joseph Lister said that, after all, carbolic acid was the best antiseptic yet found, I remembered the knowing persons who had regarded me as a singularly old-fashioned and retrograde surgeon. Again, there was a period when the fetich worship of the spray-producer reached an absurd pitch. I used simply to turn the spray off and on to suit my convenience at the moment during an operation, because I believed it to be merely a good means of washing the wound and nothing more. This was worse than heresy to the elect; it was rank blasphemy. I sometimes regret the poor old spray-producer and, if we had not such excellent irrigators, I would use it again.

In the matter of dressings the inventor has been exuberant, and I used to notice with quiet wonder how a surgeon would

pin his faith to this material or the other, and vaunt its remarkable properties. I could never see much in this ; and, when asked what dressing I would like, contented myself with requesting "anything clean." I have dressed abdominal sections very successfully with a dab of collodion.—*Liverpool Medico Chirurgical Journal, January*, 1897.

66.—DRY DRESSINGS.

By A. G. Miller, M.D., F.R.C.S. E.,
Surgeon to the Edinburgh Royal Infirmary, and Lecturer on Clinical Surgery.

[The following is taken from Dr. Miller's paper in *The Practitioner*, January, 1897 :]

During the past thirty years I have seen many changes in surgical treatment, the greatest of which has, of course, been the introduction of antiseptic dressings. The dry cotton-wadding dressing of Guérin and the "Gamgee tissue" introduced by the late Mr. Samson Gamgee, of Birmingham, were great aids and advances in dry surgery, and were welcomed. The latter I use regularly and frequently, and could not well do without. Another admirable and useful recent introduction has been the antiseptic gauze for deep dressing and packing of wounds. This dressing I have employed with increasing confidence in many ways ever since I became acquainted with it, mostly in the form of iodoform gauze. Bacteriologists tell us that organisms require certain conditions in their surroundings before they can become active. Moisture is one of these. Keep these troublesome microbes dry and they will cease from troubling, and the surgeon will have rest. Believing in the fairly general though not universal applicability of this theory, I have "gone in" for dry surgery as much as possible. My methods are as follows :—In an ordinary aseptic operation, having used antiseptic lotions to make hands, instruments, and the part to be operated on as aseptic as possible, I thoroughly dry the operation area of skin and then wash the skin with ether. Towels wrung out of carbolic lotion, or warm and dry from a steriliser, surround the operation area. Swabs or sponges to be used for drying the wound are wrung out of carbolic lotion and made as dry as possible. No lotion is splashed or irrigated over the wound. The hands of the operator and assistants are occasionally dipped in some antiseptic lotion, but shaken dry or wiped on a swab. At the conclusion of the operation the entire raw surface is dusted with a powder (boracic acid 7 and

iodoform 1), which is well rubbed in with a damp swab. After the stitches are inserted the wound and surrounding parts are dusted with the iodoform and boracic acid powder, a layer or two of iodoform gauze applied, and over that plenty of wool and a bandage. If oozing is expected wood wool is employed. Drainage-tubes are seldom required. I do not leave the wound perfectly open to the air, as Professor Spence did, because I consider that there is some risk of septic infection after the operation as well as during its performance.

There is one operation, however, in which I sometimes revert to the old Spence dressing—viz., excision of the testicle. If I have to deal with a part that is septic before the operation I modify my procedure slightly. I am not so careful to keep everything dry during the operation. I may even flush the wound thoroughly with a strong antiseptic solution, but after this I dry every part of the wound thoroughly, dust with powder, pack or cover with gauze, and put on wood wool, bandage, &c. I have no hesitation whatever in saying that in my hands this method, which doubtless many others employ, has been more satisfactory than the more sloppy and moist methods. It is cleaner, nicer, and at least quite as successful as other methods. In this connection I would like to refer to a method of approximating deep surfaces in a wound that, so far as I know, is somewhat original. Instead of buried stitches of catgut I put in from the cutaneous surface stitches of strong silk. The needle is entered some distance from the cut margin—half an inch or an inch—passed deep down to the very bottom of the wound and brought out at a corresponding point on the other side; it is then passed the opposite way at an interval of an inch or more, but in the same manner. In this way one has a loop of strong silk, which, on being tightened, approximates the deeper parts of the wound without touching the cut edges, which are left free. One or two of these deep stitches will completely approximate a wound and make drainage unnecessary. The free edges come together very nicely after these deep stitches are tied, the skin and superficial cellular tissue being projected in the form of a ridge. I generally bring the cutaneous margins together by a continuous stitch with a stout horse-hair. One drawback to this method of approximating the deep parts of a wound and saving drainage is that the deep stitch cannot be left in for more than two days. If left longer it would cause considerable irritation. This necessity for removal, however, is not an unmixed evil, more especially in operations for hernia. My experience is that these wounds, on account of their proximity to the genitals, are the better for being dressed within the first day or two after the operation in most cases, especially in

children. When the deep stitch or stitches are taken out the skin flattens down in a comfortable manner, the edges being held neatly by the horse-hair stitch till such time as it is necessary to remove it.

Some deep wounds do not lend themselves well to this method, because there are so many important structures in the neighbourhood—in the neck, for instance—that it is unsafe to pass a needle deeply and widely ; great damage might be done. What I often do in such cases to avoid the necessity for a drainage-tube is to pack the deep part of the wound, lightly, but firmly and carefully, with a strip of iodoform gauze, the end of which is left hanging out at the lower end of the wound. The gauze acts as a drain, as we have already seen, and if the effusion into the wound be not excessive, the gauze will keep the deep wound perfectly dry. If a portion of the strip of gauze be removed, say every second or third day, the wound will contract round what is left, and when the last portion is removed, say at the end of ten days, will heal perfectly and drily. The success of this method depends on the power of healing wounds to contract, provided no irritating substance be lodged. When, therefore, the wound is kept dry by the siphon action of the gauze, and the amount of the latter is reduced from time to time, the wound, however deep, heals without any risk of a sinus forming. Of course, the objection to this method of packing is (as in the case of the deep stitches) the necessity for frequent dressing. But this (as also in the former example of hernia) is not so disadvantageous as it may at first sight seem to be. If this method is properly and successfully carried out the packing is done only once—viz., at the operation. The original strip is left, being merely diminished. This can be safely done if the wound remains aseptic. I have left gauze in a wound (ankle and wrist excisions) as a packing for a fortnight, merely diminishing the quantity by cutting off a portion from time to time, without the slightest irritation being caused by its presence. This, as I have said, can only be done when the wound is aseptic. Gauze will not drain so thick a discharge as pus.

67.—THE STREPTOCOCCUS INFECTION.

By G. Lenthal Cheatle, F.R.C.S. Eng., Assistant-Surgeon, West London Hospital, and King's College Hospital.

[We quote from Mr. Cheatle's paper chiefly on account of the importance placed upon bacteriological examination, especially in cases where the serum treatment is employed. One point not

touched upon in the paper is also of considerable importance, and that is the question of the efficiency of the serum used. See also Synopsis.]

Where it is practicable my endeavour is to make an efficient bacteriological examination of every case that possesses evidence of a bacterial nature. The result of an investigation of this kind sometimes actually makes the diagnosis and at other times leads to its confirmation. Consequently, it has a marked influence upon the prognosis and treatment even in the course of ordinary clinical surgery. There can be no doubt that it is an addition to the task of ordinary hospital work, but as experience increases the burden decreases, and this collection of evidence becomes part of the ordinary routine work. In cases that are to be treated by antitoxins or in those that are to be published concerning their use or otherwise this examination is a *sine quâ non*. The histories of the following patients are selected out of a series of cases, and they may prove of interest at the present time. In each of the six cases that are reported a virulent streptococcus pyogenes was found. Three of these were treated by the anti-streptococcic serum as well as by operative and antiseptic surgical methods. One case was treated by the anti-streptococcic serum alone; and two were treated by operative and antiseptic surgical procedures alone, which prove that properly conducted surgical means can cure even when the patient suffers from a severe streptococcus infection, whether that infection is pure or mixed. Therefore, when a case is treated surgically as well as by the injection of the antitoxin it must not be too hastily assumed that the latter was the cause of the cure. When reporting such cases as these it seems to me very important to state whether the infection was pure or whether it was mixed, for those cases in which there is a mixture of infection it is not always easy to definitely say which of the infecting organisms is the cause of most or of all the local and constitutional signs. For instance, a streptococcus infection may become super-infected by a highly virulent staphylococcus, and under these circumstances the latter may be, for all we know, the chief cause of the local and constitutional signs. In fact it may become the predominant organism of the mixed infection. There are additional reasons for the separation. One is that the contaminating organism, or organisms, may modify the whole biological conditions, under the influence of which the streptococcus pyogenes exists and operates; and another is that a mixture of infection tends to lower the natural antiseptic properties of the part by further diminishing its physiological resistance. Hence it is not fair to publish the failure of an antitoxin to cure without stating the exact circumstances in which its curative power was tested.

Therefore these cases have been divided into those of pure infections and those of mixed infections, and three of each are described in that order.

The first case was one of a general streptococcus infection in a man aged 45, and 138 c.cm. of the serum was injected in six days; the case proved fatal. The second case was one of localised streptococcus infection, and was subjected to very extensive operative treatment as well as the injection of 65 c.c. of the antitoxin. From the surface of the wounds streptococci were stained during the whole of the healing period whilst the patient was in hospital. The seat of injection gave no sign of local complications. The patient recovered. The third was a case of severe local infection, with recovery; the source of inoculation could not be detected. The disease probably began as an osteo-myelitis of the bones forming the right sacro-iliac synchondrosis. No antitoxin was injected. The next three cases are those of mixed infection. The fourth case was undoubtedly one of extravasation of urine, and, I thought, probably due to the ulceration of malignant disease at the base of the bladder and prostate, and the extravasation the source of the mixed infection. In all 140 c.c. of the anti-streptococcic serum had been injected. The case proved fatal. In Case 5 a girl aged 16 years attended as an out-patient with facial erysipelas. Upon the first day of her attendance 10 c.c. of the serum were injected. On the next day the rash had spread to the front of the forehead into the scalp and over the nose and chin, the temperature being 101° F. A dose of 20 c.c. of serum was injected. On the following day the rash was still spreading; the temperature was 102°, and 30 c.c. of serum were injected. On the fourth day the rash had spread still further, involving the neck and forehead, and no more antitoxin was given, but the face was getting better. No seat of inoculation was to be discovered. As the disease seemed to be running its usual course, and the 60 c.c. of the antitoxic serum did not appear to influence it, no more injections were made. Case 6 occurred in a girl aged 18, and was one of middle-ear disease and mastoid suppuration. The mastoid process was chiselled open and pus was scraped away together with the infiltrated cells of the mastoid process. Chiselling still growths back the lateral sinus was well exposed, and as this venous channel was evidently thrombosed, it was freely opened upwards and downwards, and the same offensive and semi-purulent contents were removed. The limit of the clot was reached in the upper end but not in the lower. The internal jugular vein was next exposed and ligatured, and an inch of it excised at the level of the upper border of the thyroid cartilage. No thrombosis had reached this point. She made an uninterrupted recovery. There was

no facial paralysis. Stained cover-glass preparations and stroke cultivations made on agar, gelatin, and potato from the blood-clot from the lateral sinus demonstrated a very mixed infection of streptococci, staphylococci, and various kinds of bacteria. No antitoxin was administered.

With regard to the cases injected with the antitoxic serum, it will be seen that the disease was well advanced in all of them before the anti-streptococcic serum was administered. This point is important, and had these cases been treated by the serum quite early their results might possibly have been different.—From Mr. Cheatle's paper in *The Lancet, January* 2, 1897.

68.—RESECTION OF ARTERIES AND VEINS.

By J. B. Murphy, M.D.

[This paper is chiefly occupied by an experimental research. It includes the question of the suture of arteries and veins, as well as resection. Two cases are given at the conclusion of the paper, the first of suture of the femoral vein, and the other of resection of the femoral artery. In both cases there was suppuration, but the ultimate result appears to have been quite satisfactory.]

The points to be considered in the technique are :—(1) Complete asepsis ; (2) exposure of the vessel with as little injury as possible ; (3) temporary suppression of the blood current ; (4) control of the vessel while applying the suture ; (5) accurate approximation of the walls ; (6) perfect hæmostasis by pressure after the clamps are taken off ; and (7) toilet of the wound.

The indications for operation are :—(1) Injuries to large vessels in operation ; (2) injuries to large vessels from stab, puncture, bullet, or lacerating wounds ; (3) traumatic and dissecting aneurisms ; (4) sacculated, fusiform, and arterio-venous aneurisms. In the first class of cases, *i.e.*, injuries to large vessels in operation, the injury to an artery, if less than two-thirds the circumference be involved, should be immediately repaired by suture. If more than two-thirds the circumference be injured, the division should be made complete and the invagination method used for approximation, care being taken that the invaginating sutures do not penetrate the tunica intima of the invaginated portion ; that the external sutures do not injure the intima and are first inserted in the invaginated portion parallel to the long axis of the vessel and then inserted in the overlapping end. By this method the circumference of the artery is not diminished as it is when the suture is inserted transversely to the arterial axis. The sheath should be carefully sutured over the artery, as it gives additional support, and, if

the general field of operation should suppurate, the line of union would thus be protected from infection. The field of operation should always be temporarily drained, as a blood clot prevents primary adhesions. When the edges of the arterial wound are ragged they should be freshened and clean cut before the suture is inserted.

In the second class of cases, *i.e.*, injuries to large vessels from stab, puncture, bullet, or lacerating wounds, the primary hemorrhage, as a rule, is not excessive, particularly when caused by bullet wounds, except when the abdominal aorta or renal vessels are involved, as the tissues are irregularly torn and over-lap each other in such a manner as to prevent the escape of blood and favour the formation of aneurism; therefore, we have ample time to make proper preparation for the suture of the vessel. The wound may have existed for weeks or months with the dissecting aneurism and still be amenable to suture, as the opening in the vessel itself enlarges but little with time, the aneurismal sac being formed from the surrounding tissues and laminated coagula. The technique of suture in this class of cases, should be the same as in the first, after the aneurismal sac has been enucleated and the opening in the vessel has been exposed and separated from its attachment to the wall of the aneurism.

In the third class of cases, *i.e.*, traumatic aneurisms of long standing, we have the best variety of cases for arterial suture. The opening in the artery is usually small, the arterial wall is healthy, and a sufficient quantity of aneurismal stump may be retained to produce a firm line of approximation. From a theoretical standpoint, as well as from the result of experiments, there is no danger of the formation of aneurism at the point of primary suture for injuries and should not be for secondary suture, as in aneurisms of this class. The vessel should be exposed above and below the aneurism, and temporary hæmostasis obtained by a very mild compression forceps. The aneurismal sac should then be freely opened and dissected down to the position of the opening in the artery. The edges of the opening should be freshened and closed, the same technique being observed as in primary suture.

In the fourth class of cases, *i.e*, sacculated, fusiform, and arterio-venous aneurisms, the aneurismal sac should be exposed and dissected down to the position of the healthy coats of the artery, where it should be amputated, leaving sufficient of the aneurismal coat and arterial wall to allow a row of sutures involving one-sixteenth of an inch of the margin on either side, so that when the suture is complete, the size of the vessel will be below its normal calibre. This lessens the arterial pressure of the vessel at that point, and there should follow a union of the walls. Care should be taken not to produce an approximation

of arterial surfaces covered with coagulated laminæ. As the longitudinal suture of arteries has been so successful experimentally, little doubt remains but it can be more successful clinically, as asepsis and antisepsis can be more effectually carried out.—*Medical Record, January* 16, 1897.

69.—SPRAINS AND THEIR TREATMENT.

By A. H. Tubby, M.S. Lond., F.R.C.S. Eng.,
Assistant Surgeon to Westminster Hospital ; Surgeon to Out-Patients, Evelina Hospital for Sick Children, &c.

The symptoms of a sprain are sufficiently well marked. In severe cases the patient faints from the pain produced. The cause of the pain at the time of accident is referable to several causes : stretching of the ligaments in one part and giving of the ligaments in another part ; sudden effusion into the joint, and a general stretching and tearing of the parts around the joint. The pain becomes less severe shortly after the accident, and for a time there is a period of quiescence, lasting three or four hours, and then the pain increases in intensity, the second advent of the pain being due to tension arising from extravasation in the joint cavity, and also in the parts around the joint which have suffered. In a short time swelling appears, due partly to effused blood and effused lymph in and around the joint. The swelling is especially noticeable at those parts of the capsule which are not supported by ligaments nor by muscles. With the increase of pain and swelling the movements of the joint become limited, and the patient is unable to walk. After a time, usually three or four days, subcutaneous extravasations of blood can be made out, and such extravasations are always most marked where the damage to the ligaments and the peri-articular tissue is greatest, and give an indication as to one detail of treatment. The essential point to bear in mind is the existence of two stages as indicated by two attacks of pain : the first being the stage of injury, associated with stretching and tearing of the parts and effusion of blood ; and the second occurring after an interval of two to three hours of more or less quiescence, being the stage of tension and continued effusion. Much harm is often done by the patient attempting to use the joint during the quiescent period. Sometimes an effort is made to walk off the sprain, with bad results. Of course, fractures and separations of the epiphyses should be carefully excluded. In doubtful cases, after the lapse of some days, if we have

reason to question our diagnosis in the case of a sprain, the diagnosis can be cleared up by observing the tender spots about the joint. These tender spots existing after a sprain generally mark the situation of roughened, inflamed synovial fringes, or sometimes spots where there has been extravasation of blood into the joint capsule. In severe and old-standing cases these tender spots may be indicative of the position of bands of adhesion.

Now, with reference to the question of treatment, the means at our command are the following :—The application of cold and of heat, properly applied pressure, immobilisation by splints or plaster of Paris, friction, and the use of the constant current, are all valuable in their place, but the true treatment of sprains consists in the appreciation of the right time to apply them. The application of cold, either by ice or by cold water, or by evaporating lotions, has of late years fallen into considerable discredit, but I think undeservedly. And the discredit to which it has come is due, not to the agent itself, but, if I may say so, to a non-intelligent method of applying it. If a case of sprain is brought to me within the first two or three hours at most of its occurrence, I carry out the following treatment :—I apply cold vigorously for about ten minutes to a quarter of an hour, either by pouring cold water over the joint, or by the application of ice, or by the use of spirit-lotion, and then wrap the joint round with lint or other suitable material soaked in cold water or in spirit-lotion, and put on three or four layers of cotton wool, and place the joint in that position at which there is least potential cavity in it, and then firmly bandage over it. If the second stage of the symptoms of sprain has come on, and the pain, which passed off somewhat after the injury, has now become more severe, the application of cold is not of much value, since by this time the tissues have become distended with blood and with lymph, and if the parts have been kept at rest effusion will have ceased now to be poured out. The most prominent and troublesome symptom is that of pain. Nothing succeeds now so well in diminishing the pain as the frequent application of hot water, or, better still, of hot vinegar and salt—an empirical but very successful remedy. During this time the joint should be kept at rest, and it is advisable also to maintain pressure on it by cotton wool, since well-directed pressure also promotes absorption.

As a rule, most joints are rested too long, and one may say that, taking an average, three or four days after the swelling has subsided, movement of the joint should be commenced. Now the movement of the joint is also an important point to be attended to. It has already been stated that we can ascertain

by the distribution of the extravasated blood which part of the joint has been most injured. To take, for example, injury of the external lateral ligament of the ankle. No one would be so unwise as to invert that ankle as part of the movement, but would flex and extend and carefully evert it, but not invert it, so that while moving the joint he would be in no way interfering with those parts which have been so recently injured. It should not be forgotten that constitutional conditions influence the question of sprains very considerably. For instance, one must be careful in the treatment of a tuberculous patient, and see that such a patient rests much longer than an ordinary one.

In some cases the amount of swelling is very considerable, and it is not merely sufficient to put on hot applications and to place the joint at rest, but something more might be done. The best method is properly applied and directed friction. The object of friction is to empty the lymphatics of a certain amount of coagulated lymph which blocks them ; and in rubbing the parts it is always advisable to begin to rub that part of the swelling which is most distant from the joint, thus emptying the lymphatics at that part first, and then those parts which are nearer the joint, and so promote circulation of lymph from the most congested to the least congested parts. This is a valuable "wrinkle," and one which has always been attended with considerable success. Together with the rubbing, frequent ablutions of the part with hot water, or the application of hot vinegar and salt, should be adhered to at this stage. If, after ten days' treatment of this kind, the thickening about the joint has not disappeared, and there still remain tender spots on moving the articulation and on making pressure, counter-irritation by iodine, or, better still, by blisters, is indicated. As a rule, one may say that in fourteen to seventeen days, with treatment as above indicated, a severe sprain will cease to give rise to trouble and inconvenience, and the patient will be able to walk about with comfort. Sometimes, however, it happens that on the patient attempting to use the joint, acute pain sets in again. Such pain is due to subacute congestion of the joint, and the only treatment for it is absolute and complete rest. This is most effectual if the joint is placed in plaster of Paris, and in some instances four to six weeks is not too long to keep a joint entirely at rest. After a joint has been at rest so long, movements will necessarily be awkward, stiff, and not infrequently painful. Generally speaking, such pain does not arise from adhesions within the joint, but is really due to the condition of the muscles. They are at this stage somewhat atrophied, and their tendons are more or less glued in their sheaths. The best means of overcoming the difficulty is friction with

stimulating applications, such as lin. chlorof., and I frequently use a liniment composed of lin. opii, lin. bellad, together with the preceding. In addition to this the use of the faradic current is of value, more especially if there be muscular wasting and stiffness without much pain. If there is much pain or tenderness present the constant current answers better, as it seems to not only improve the nutrition of the muscles but to remove the pain. If, however, there should be considerable stiffness without pain coming on after the prolonged rest, and not removed by friction and the use of the faradic current, forcible movements of the joint under anæsthetics should be carried out.—From Mr. Tubby's paper in *The Practitioner*, *April*, 1897.

70.—FRACTURES AND DISLOCATIONS.

[The following is taken from an article under Surgical Progress in *The Hospital*, April 3, 1897 :]

In an able article on the treatment of fractures, Dr. G. G. Davis (*Annals of Surgery*, December, 1896) does not support the practice of allowing patients to walk about on broken limbs before union has occurred. He agrees with Reclus in saying immobilise the fragments, but mobilise the muscles, tendons, and joints. Massage will improve the circulation, lessen the pain, tend to prevent adhesion of the tendons to their sheaths, promote the absorption of inflammatory material, and prevent contraction or atrophy of the muscles. Passive motion judiciously employed tends to prevent the limitation of the motion of joints by the formation of strong fibrous bands, and likewise to replace any displaced fragments of bone and keep the part in its normal shape. The importance of union and avoidance of deformity is so great that it is, as a rule, unwise to resort to massage or any marked movements until the fragments become to a certain degree fixed in the proper position, usually for the sixth to the tenth day, and in the lower extremity frequently much longer. Afterwards, the more frequent the movement and massage, if effected gently and without disturbance of the bones, the quicker the recovery. Daily massage will not be too often.

Two cases of ununited fracture of the humerus treated according to the method already described in *The Hospital*, by fixation with bone ferrules, are published by N. Senn (*Chicago Clin. Rev.*, September, 1896), from his surgical clinic, but the ultimate results are not established. The ferrules are absorbed in from six to eight weeks.

In two skiagrams by J. Lynn Thomas (*Brit. Med. Jour.*, January 2, 1897) of Colles's fracture of the radius the often

doubted concomitant fracture of the styloid process is well depicted. He found this condition of the ulnar styloid process in four out of five cases skiagraphed.

The view that fracture of this process and rupture of the triangular fibro-cartilage of the wrist are frequent complications is also reintroduced by R. C. Lucas (*Brit. Med. Jour.*, January 9, 1897).

Forward displacement of the lower fragment in Colles's fracture, although believed to be of the rarest occurrence, is proved by J. B. Roberts (*Amer. Jour. Med. Sci.*, January, 1897) to be not infrequent. The treatment consists in immediate and complete reduction of the fracture, followed by a retentive splint, which will not interfere with the free use of the fingers. The deformity must be overcome, even if great force is necessary to loosen the impaction, by the surgeon grasping the metacarpus of the patient with one hand, the lower part of the forearm with the other. This should be done with the patient's hand in the supine position. The thumb of the surgeon's hand which holds the metacarpus should be placed on the palmar surface of the carpal fragment of the radius, as it lies just behind the thenar eminence. Extension and counter-extension are made for a moment; the hand suddenly bent backward in strong dorsal flexion, and the lower fragment at the same instant pushed backwards into place by the surgeon's thumb. Reduction is painful, but is so quickly done that, as a rule, anæsthesia is unnecessary. A coarse, grating sensation is experienced. Occasionally a repetition of the manipulation may be needed to obtain perfect restoration of the bony contour.

In old dislocations of the elbow, W. J. Welsh (*Med. Record*, September 19, 1896) recommends cutting into the joint, severing the tendon of the triceps, removing the olecranon, dissecting them both out, and then, by proper and careful manipulation, bringing the radius and ulnar forwards into their proper places, and retaining them there with the view of establishing ankylosis. Intractable ankylosis need not be feared, as time and use will largely restore the functions of the limb and joint, including rotation of the forearm.

Kofend (*Epit. Brit. Med. Jour.*, November 14, 1896) records an unique case of persistent traumatic dislocation of both hips. The patient was admitted for malignant disease of the lower jaw, but the special interest referred to the condition of the lower limbs. Thirteen years before, at 42 years of age, the hip joints were dislocated, and treated unsuccessfully by a bone-setter. On examination, the right thigh was flexed, adducted, and rotated in, the foot pointing forwards, and much flattening in front of the acetabulum, but the head and trochanter could

be easily felt behind. The head was four inches above Nélaton's line, and the head lay in a capsule somewhat above and in front of the great sciatic foramen. The acetabulum could not be felt. The left thigh was almost at right angles to the body, the head being beneath the obturator foramen, so that its movements could readily be felt per rectum. The patient stood mainly on the right foot, the pelvis tilted to the left and forwards, and the left limb in the position of genu varum. There was compensatory lordosis and scoliosis. The gait was oscillatory, and walking only possible with the aid of a stick in the right hand. Operation for the relief of the deformity was refused.

Two cases of the somewhat rare lateral dislocation outwards of the knee-joint are figured and recorded by F. Page (*The Lancet*, October 3, 1896); these are of interest, inasmuch as no drawings of this injury are given in recent text-books on surgery.

Dr. Graham (*Amer. Jour. Med. Sci.*, November, 1896) relates four cases of displaced semi-lunar cartilage treated by massage, movement, and manipulation. He concludes by stating that in attempting to replace the cartilage the knee should be flexed, then extended suddenly, the leg rotated inwards if it be the internal, outwards if it be the external, while pressure is exerted over the injured region. After a meniscus has been replaced it is secured by a pad and figure of eight bandage—instead of plaster and splints. Carefully applied massage, resistive movements, home exercises, and electricity so strengthen the front muscles of the thigh, the fascia, ligaments and attachments of the knee-joint that they will safely hold a previously dislocated semi-lunar cartilage without artificial support. These cases do not include those requiring surgical operation.

The following case, recorded by W. Thorburn (*Med. Chronicle*, November, 1896) is of interest as indicating the value of the X rays in diagnosis and because the lesion discovered is probably unique. A labourer, aged 61, in good general health, had a weight fall on his left foot, immediately behind the first metatarso-phalangeal joint. For three weeks he continued at work with continuous pain, but thereafter totally incapacitated by increasing pain on standing and walking. By an incision the external sesamoid bone attached to the tendons of the flexors of the great toe was exposed, found to be displaced outwards from its articulation with the metatarsal bone (? and excised). The wound healed by primary union, and two months later the patient was again at work.

71.—THE PREVENTION OF FLAT-FOOT AND SIMILAR AFFECTIONS.

By R. W. Lovett, M.D., Boston.

[The following is taken from Dr. R. W. Lovett's paper. His conclusions are based upon observations made on trained nurses. Whereas the amount of time lost owing to disabled feet was previously very considerable, no nurse had been off duty from this cause during the twenty months since the regulation boot was adopted :]

The distortions that exist among these are practically three : (1) Outward displacement of the great toe ; (2) crumpling of the toes ; (3) excessive pronation of the foot. By pronation of the foot I mean the position of weight bearing, the position in which the forward part of the foot is abducted and the inner malleolus becomes more prominent. In the normal foot not bearing excessive weight, the inner border of the great toe, the inner malleolus and the inner condyle of the femur should all be in the same vertical plane. A certain amount of pronation is normal ; but in the weak or over-weighted foot, the foot is displaced too much outward in its relation to the leg, and by this movement of pronation carried to excess. This condition is often spoken of as "weak ankles." Allow me to state it in a mathematical way. Pronation is a compound anatomical movement consisting of abduction of the forward part of the foot plus eversion of the sole of the foot. It is the position associated with "toeing out." Pronation is the position taken by tired people ; the position which the muscles have the least work to maintain.

The endeavour has been to prevent excessive pronation by use of a boot embodying certain principles which are neither the new nor original with me. (1) The inner line of the sole should be straight, or nearly so. In children it should diverge inside of the straight line to allow the maintenance of the great toe in Meyer's line. This requirement is necessary to prevent the displacement of the great toe. (2) The shank should be fairly high and stiff and not cut away at its inner border, where its support is most needed to prevent the foot from rolling over on its inner side in weak feet. Cutting away of the inner side of this is almost universal in women's boots. As a rule the shanks of boots are too low, especially this is to be noticed at their inner edge, and one improvement to be made is so to manufacture the boot that the shank shall be oblique, highest at its inner border and sloping from that downward. (3) The sole of the boot should be as wide as the foot opposite the great toe joint. It is not necessary to demonstrate that, for proper

weight bearing, the ends of the metatarsal bones should be free to spread out and not to be crowded one over the other. This width of the foot is the most difficult thing to obtain, not only on the part of the wearer, but from the maker. At the hospital all boots are rejected at once, where an outline tracing of the sole of the shoe is not practically as wide as the outline tracing of the bare foot, with weight borne upon it. (4) The forward part of the sole should diverge inward from the long axis of the foot. That is, it should be made to hold the foot in an adducted position. This is because the prevention of abduction of the forward part of the foot is the prevention of pronation, because the position of adduction is the position of strength and of muscular activity. Holding the foot adducted tends to throw the weight onto the outer border of the foot and to preserve the arch. When it is seen that the weight is borne too much on the inner part of the sole, some means, more than adduction of the boot is necessary, and among the nurses I have the inner side of the sole and heel made one-eighth or one-fourth of an inch thicker than the outside, whether they complain of trouble or not, using this in addition to the adducted boot to prevent pronation of the foot.

I have reserved to the end what seemed to me to be, on the whole, the most important part of the subject, namely, the use of a boot for children which shall be of the same shape as the human foot, a boot which conforms to the principles already laid down. If persons who have reached years of discretion choose to wear boots which are unreasonable and harmful, they have a perfect right to do so ; but children should at least have the chance given them of reaching years of discretion with their feet comparatively undistorted, to be spoiled later if their inclinations lead them to do so.

Finally, the prevention of disabled and disabling feet is, I believe, in general to be attained by the use of a boot holding the foot in its position of greatest mechanical strength. The prevention of excessive pronation by adducting the forward part of the foot and preventing eversion of the sole of the foot is, I believe, the means by which this is to be done in general.—*Boston Medical and Surgical Journal, March* 4, 1897.

72.—CARIES OF THE SPINE.

By Dr. H. Schramm.

The author (*Wiener Medic. Wochenschr.*, 1896, xlvi, 958) reports 110 cases treated by himself ; in 10 cases the affection was situated in the vertebra of the cervical region, in 66 in the

dorsal, in 21 in the lumbar, and in 3 in the sacral ; in 10 cases the situation is not mentioned. In regard to the etiology some traumatism is to be accepted as one of the most important causes, because the tubercle bacilli have a tendency to infest slightly injured bones or joints. The reason why caries of the spine is most frequently met in children under four years is, that during this period they are most prone to injury, either by falling or being carried in a slovenly manner. Heredity is also a great factor in caries of the spine. In 25 cases the disease was developed as a sequel to other maladies ; in 12 cases it followed whooping-cough, in eight measles, in five some other febrile disorder. Of course these diseases only predisposed the system to the reception of the tuberculous virus. In the majority of cases there was present at their reception a pronounced kyphosis, only in one case was this absent. A boy, six years of age, who came to be treated for a cold abscess, situated above the right Poupart's ligament, and in whom the abscess was said to have developed in three months without any great discomfort. After the abscess had been opened by a broad incision, it was found that the origin of the suppuration was in the first lumbar vertebra, whose anterior surface, as far as the finger could reach, was roughened. Notwithstanding the best after-treatment, the child became gradually worse, and left the hospital incurable. The case proved to be one of *spondylitis superficialis*. Hoffa claims that these forms are due to actinomycosis. Microscopical examination did not warrant this diagnosis, but on infecting a rabbit with some of the pus, the latter died of acute miliary tuberculosis, hence the case was undoubtedly one of tuberculosis. As to the frequency of abscess formation in disease of the different vertebra, there was suppuration present in 40 per cent. of the cases of caries of the cervical, in 36·4 per cent. in that of the dorsal, in 70 per cent. of the lumbar, and in the three cases of the sacral region. It is not to be inferred from this, however, that tuberculosis of the dorsal region has a lesser tendency to the formation of abscesses. The course pursued by the abscesses was various ; those originating in the cervical region presented in two cases as retropharyngeal abscesses. In one case it descended along the deep fascia of the neck to the *fossa supraclavicularis*, and in another case of caries of the second and third cervical vertebra it made its way backwards and appeared close to the spinous process of the diseased vertebra.

In 68 per cent. of the cases of disease of the dorsal vertebra, the suppuration extended along the anterior surface of the vertebra, and in one case the abscess which had reached the posterior mediastinum burst into the pleural cavities, and producing an acute pleurisy, caused death. In other cases the pus

travelled further downward and appeared above or below Poupart's ligament or invaded the intermuscular spaces of the thigh, presenting a fluctuating tumour at the anterior, internal, or posterior surface of the thigh. A second complication of spinal caries is the so-called compression myelitis. According to later researches this is not caused by the kyphosis as such. Very rarely also do the abscesses exert a direct pressure on the spinal cord. The symptoms are produced by a serious infiltration of the meninges and of the spinal cord itself.

The prognosis in caries of the spine is bad, particularly as we never can be certain in what stage the disease may be checked. As a general rule the prognosis may be influenced by :—(1) Heredity ; in children whose parents have been tuberculous or luetic, the affection is exceedingly grave. (2) The general condition of the patient's health. If the vertebræ only are the seat of disease, and the organism is otherwise healthy, the prognosis may be better.

Treatment.—Fresh air continually supplied to the patient is of immense value. Locally, the gypsum bed, as described by Lorenz and Hoffa, was used. The child was laid on a flat table and thick bolsters were placed under the forehead and pelvis, which position curved the spine slightly forward. Then the whole back was covered with gypsum bandages, from the back of the head to the gluteal folds, carefully pressed into all folds, particularly at the neck and the pelvis. After having applied ten to fifteen layers of the bandages, the whole was strengthened by thick layers of wood shavings, soaked in a mixture of gypsum and water. Lastly, it was well padded, and the child was laid in it and fastened there with broad bandages. In a number of cases use was made of extension of the spinal column by fastening a weight of three to six kilogrammes onto Glisson's loop, attached to the head of the patient, and laying the child on a hard mattress at such an angle that the weight of the body produced counter extension. Where abscesses were formed, different procedures were adopted ; some were incised and others were aspirated and washed out with a solution of boric acid, then injected with 30 to 50 grm. of a iodoform-glycerine emulsion (1 : 15). The conclusion was, however, reached to let the abscess alone if possible, and by dietetic and climatic treating to counteract the original disease. During late years it has been recommended to resect the diseased parts and thoroughly scrape out the disease. This treatment was resorted to in five cases, but the operation is only recommended where it is possible to approach the diseased part without having to resect much healthy bone, or where the suppuration is due to a remaining sequestrum.—*Pediatrics, November* 16, 1896.

73.—TUBERCULOSIS OF THE SUPERFICIAL LYMPHATIC GLANDS.

By De Forest Willard, M.D., of Philadelphia,
Surgeon to the Presbyterian Hospital, &c.

[The following is taken from Dr. Willard's paper. Everyone will not agree with all the views advanced, especially in regard to the here somewhat exaggerated danger of general infection from these glands :]

As regards diagnosis, syphilitic infection of the glands of the neck, and of the axillæ, should disclose a primary infection-sore either upon the finger, or face, or in the mouth ; while in secondary and tertiary manifestations other indications would be present. Syphilitic infection usually involves but a single gland, not a chain. Simple adenitis and acute suppurative adenitis are distinguished by the rapid progress, together with the presence of a traumatic cause, or of some septic cause for infection, as scarlatina, &c. Enlargement of the cervical, the axillary, or the inguinal glands in carcinoma is rarely primary, and the initial lesion should be investigated. Sarcoma, when it occurs primarily in these glands, is usually single, but occasionally gives rise to error in diagnosis. In the early stages diagnosis may be difficult ; but in the later stage its characteristics are more marked. Sarcoma is of greater size and rarely suppurates, and it never contains the cheesy material of tuberculosis. It grows rapidly and involves the surrounding tissues. Secondary lympho-sarcoma is rare. Benign tumours of the glands, adenomata, are single, not multiple. Lipomata are single, and in the initial stages are liable to be confounded with glands. Pseudo-leukæmia can be diagnosed from the fact that the glands in the other parts of the body are similarly affected, and the tissue does not caseate. Search for bacilli may or may not be successful. Lymphadenoma is accompanied by enlargement of the spleen and increase in the number of white corpuscles.

Prognosis.—Is tubercular infection of the glands a constant menace to the constitution ? Emphatically, yes. Thorough investigation has shown clearly the danger of infection, and constant watchfulness on the part of the guarding leucocytes is the only hope of escape. The resistive power of the individual failing from any cause, even temporarily, may be followed by rapid dissemination of tubercle, and the only safe course is removal ; even if all of the foci are not extirpated, the number of invaders will be diminished and the hopes of escape greatly improved. As already stated, suppuration may destroy the bacilli, and spontaneous cure take place ; but this is a slow and

tedious process, and is not free from danger to life, especially if a large number of glands are involved. In simple strumous hyperplasia in children, delay may sometimes be allowable to permit of constitutional and hygienic treatment, but the disease should be carefully watched. While every surgeon has seen many cases of old, suppurative, scrofulous glands finally recover, yet few will feel that the course pursued was a desirable one.

Operative removal.—If the case is seen early, and there are but few glands involved, the operation for removal is comparatively a simple one; although the surgeon should not be content until he has taken away every gland which is at all indurated. I do not believe, however, that it is advisable at a primary operation, when only one or two glands are involved, to lay open the neck to its entire extent for the removal of non-indurated lymph-nodes, as is sometimes advised, since the tubercular element may have been arrested in the primary gland. It is quite possible, if the case is kept under inspection, to do a second operation in abundant time to prevent systemic infection. Every experienced surgeon recognises the fact that when he enters upon the operation for the removal of tubercular glands from the neck he is to be prepared for one of the most serious operations. The most careful preliminary examination fails to reveal the deep glands which have become implicated, and before the extirpation is completed most important structures may be encountered. In many cases the jugular vein has been injured; the carotid, vertebral, and subclavian arteries are often exposed to view; the pneumogastric, phrenic, and spinal accessory nerves may be uncovered, and when the infiltrated glands, deep beneath the sternum and clavicle, are reached even the innominate may be exposed. To follow out the plan proposed by some surgeons for the removal of glands by small separate incisions seems to be exceedingly unwise. Full exposure is important for safety and thoroughness, and division and laying aside of the sterno-mastoid is sometimes necessary. When suppuration has occurred and the glands have become adherent to the skin it is better to remove the superincumbent tissues by an elliptical incision, and to excise the surrounding tissues freely.

I am as yet not prepared to endorse the plan of cooking all the remaining bacilli with boiling water, or by boiling water *in situ* with the cautery. Surrounding structures are too important. My personal plan is to close a sterile neck-wound without drainage where the glands have not suppurated, and when no caseous gland has been ruptured. When dangerous material, however, has escaped upon the fresh wound, I am apt to drain with either rubber tubing or iodoform gauze until the first or second dressing. Drainage may also be required where

large masses have been removed directly above the clavicle, leaving, when the skin is brought together, a large cavity between the trapezius and clavicle into the depth of which the skin refuses to fall. Such an open space is dangerous as regards infection. When union of the skin with the deep tissues has been secured the tube should be removed. The pad must be accurately applied and a voluminous dressing imposed. In all cases following operation upon the neck, a thick, sterile dressing is advisable, and it should be covered with many turns of muslin bandage, thus making a most effective splint, and holding the head well in position. This can also be accomplished by a few turns of plaster of Paris bandage, but the latter is not as comfortable for the patient as the other form. In cases where the incision extends upward to the mastoid and there is danger of infection at the upper end of the wound, the extremity should be closed with aristol and collodion, especially when it is not advisable to cover the whole head with a bandage.

In the groin many difficulties will be encountered, as not infrequently the glands are deep about the femoral vessels and extend within the pelvis along the line of the external iliac. In old cases, where great infiltration has occurred, there will sometimes be uncertainty as to diagnosis, as primary syphilitic lesion will have disappeared and only the statement of the patient can be taken. When the disease recurs after operation, in the neck or elsewhere, a second and even a third or fourth attempt should be made, since even after multiple efforts success has been attained.

Incision and curettage.—Numbers of cases refuse operation ; these should be informed of the risks they are assuming. They should also be notified that the plan of incision and curetting will necessarily be a protracted and tedious method of cure. In cases of suppuration which refuse excision, evacuation and curetting should be performed. I am each year more and more satisfied with the use of iodine, both locally and internally. Lugol's solution has been a favourite internal remedy for many years, and it is still both clinically and theoretically useful. Locally, iodine has a marked inhibitive action upon the growth of bacilli, and is most stimulating to the growth of healthy granulations. When the tincture of iodine is injected into sinuses it may give pain, but this is followed by healthy action.

Non-operative and medical treatment.—Locally, I have found no advantage from the intraglandular injection of iodoform or chloride of zinc ; in fact, I think that suppuration has been hastened thereby, even though inserted with thorough asepis. As a diversion, iodoform may be driven into the tissues by cataphoresis, or guaiacol, iodoform, or iodine may be used

locally. In cases which refuse operation much can be gained by the prolonged use of arsenic, iron, cod-liver oil, potassium iodide, guaiacol, creasote, and other remedies. Constitutional measures, particularly securing good air, food, and general hygienic conditions, are all important in both operative and non-operative cases. All of us are familiar with the huge scars of the neck which have resulted from extensive abscesses and old scrofulous ulcers. Cure is sometimes thus effected by extensive suppuration. I have recently had a case who bore such scars for many years, and yet finally died of tubercular meningitis. These are the cases that have seemed most hopeless, yet have sometimes marvellously recovered. I think, however, that we are prone to remember the ones that have recovered, and that we forget those that have grown worse or have died. For thirty years I have tried every known plan upon these glandular cases, and have operated largely upon them. I have, of course, had returns after operation, but I am satisfied that the cases not subjected to operation have become tubercular or have died in far larger proportion than the same number from whom the glands have been removed.

Conclusions.—(1) Tubercular infection of superficial glands usually occurs from insignificant wounds, and is most common in the lymph-nodes of the neck; (2) infected glands are a constant menace to the system and should be removed; (3) great caution is necessary in operating on the deeper structures to prevent injury of vessels or nerves; (4) excision should be thorough, and repeated operations, if required, are advisable; (5) improved hygiene, air, and food are essential in both operative and non-operative cases.—*Annals of Surgery, December*, 1896.

74.—TUBERCULOUS DISEASE OF THE KNEE-JOINT.

By Henry Betham Robinson, M.S.Lond.

[The details of the three cases illustrating tuberculous hydrops and of the one illustrating pendulous bodies from the synovial membrane have been omitted:]

Cases of tubercular disease of the knee-joint starting in the bone or of synovial origin, where there is generalised thickening of the membrane, are too common to require any particular notice here. A very different matter is it with respect to certain rare forms of synovial disease, in which, from their infrequent occurrence and from their scanty recognition, errors in diagnosis are not at all uncommon.

(1) *Tubercular hydrops.*—The first form to consider is the tubercular hydrops. Here we have an extensive effusion into the joint cavity, and little, if any, appreciable thickening of the synovial membrane—it will be borne in mind that to have any quantity of fluid present in an ordinary case of synovial disease is rare. The effusion may remain for a very long time as the sole feature of the lesion; but usually, after a while, slight thickening occurs at the reflection of the membrane at the margin of the joint, forming soft villous-like processes, which overlap, and generally are attended by some atrophy of the subjacent articular cartilage. The ultimate outcome of these cases, if not remaining at this stage almost *in statu quo*, would be more implication of the synovial membrane, so that the distinctive anatomical features are lost, the condition becoming like the common form only with an excess of fluid. From a diagnostic point of view the history here would guide. The outgrowths at the synovial reflection do not in this form get of any great size to form the pendulous growths which will be spoken of later. The effusion in the joint may vary in character from a thin, almost clear fluid to a thick, brown, viscid one. The solids in suspension are scanty, not causing more than slight turbidity, but if they—made up of leucocytes and the products of coagulation necrosis—are large in amount, the condition becomes that of a joint empyema.

König, whose name is especially associated with this form of disease, has examined these joints at an early stage, and states that there is a formation of a thin layer of tubercles on the surface of the synovial membrane, along with a slight amount of chronic inflammation. Senn describes this under the name of pannus hyperplastic synovitis. This form of hydrarthrosis is generally met with in children and young adults, and from the absence of any trauma, *i.e.*, as an immediate antecedent, and from the chronicity, some constitutional cause is certainly suggested. There may be great difficulty in deciding between tubercle and congenital syphilis in some cases; in the latter, symmetry and eye lesions (interstitial keratitis, choroiditis) may confirm, but if both knees are affected in the former additional difficulty is introduced. It must be noticed that in these cases, chronic and innocent as these primary joint lesions may appear, tubercular manifestations elsewhere may be very active, showing marked tendency to caseation.

Although in the first case recorded there was marked evidence of congenital syphilis if taken from the standpoint of the eyes alone, the majority of the lesions were undoubtedly tuberculous. The condition of the knees, the diagnosis of which was a matter of dispute for some time, suggested rather some abnormal form of syphilitic joint from the symmetry and from

the age at which the lesion was present. Over-ruling these facts were, however, others far weightier. Liberal administration of iodide of potassium had produced no effect, and the joints themselves did not resemble any (as at present known) syphilitic lesion. The history also pointed to tubercle more than syphilis. The tubercular disease of the liver and the tubercular epiphysitis at the upper end of the humerus and at the costo-chondral junction of the second rib are worth noting. Experience at a children's hospital teaches that this combination of tubercle and syphilis is not at all an uncommon thing; and with many of the effects produced, such as enlarged glands, &c., it is very difficult to say which plays the chief part. One thing I am certain of is that the lesions are often much more severe where there is the dual infection.

(2) *Pendulous bodies from the synovial membrane.*—The second form I would draw attention to is where pendulous growths project from the membrane into the joint cavity. There may be only one single mass present, simulating a pedunculated cartilage, or they may be multiple. At first the synovial membrane is not generally involved, but later the tubercular mass or masses may be associated with small villous processes at the joint margin as well as with thickening of the membrane itself: when this is the condition, no great differentiation can be made from the last heading except from the size of the growths. The quantity of synovial fluid varies, but it is usually profuse. This form of tubercular disease has been especially associated with König's name. Riedel has also described them as follows:—"The synovial membrane is reddened, often thickened, and shows one or more prominences on the surface; the joint frequently contains fluid and rice-like bodies; the nodules contain numerous tubercles, often closely packed together." Of a single pedunculated tuberculous mass the writer has only seen one example, but unfortunately the notes were not forthcoming for inclusion in the paper.—*St. Thomas's Hospital Reports, Vol. xxiv.*, 1897.

NERVOUS SYSTEM.

75.—MENTAL COMPLICATIONS FOLLOWING SURGICAL OPERATIONS.

By J. T. Wilson, M.D., of Sherman, Texas.

The question may very properly be asked, why a surgical operation should produce an attack of insanity? This can no more be answered satisfactorily in every case than can the

question why some persons become insane from the many other causes to which it is attributed ; for in most cases these mental complications are a surprise, and no good reason can be given why they should follow ; in others, however, a logical explanation might be arrived at. If the patient is a high-strung, nervous individual, easily excited and unable to bear pain, the great and increasing dread of the anæsthetic, or the thought of the operation, or both, will so affect him that he will lose control of the will power, and the explosion will come after the operation and reaction from anæsthesia. In many of these cases, probably a majority, there is an hereditary taint or a strong neurotic tendency. I think it has been the observation generally that females are more subject to these mental outbreaks than males, not because they cannot endure pain with equal fortitude, but because they are, as a rule, more nervous, more excitable, and more susceptible to the extremes of mental emotion. Nervous explosions, traceable to operations upon the female genitalia, are of comparatively common occurrence. To anæsthesia has been ascribed the cause of the trouble in some instances, but in these cases it is very likely that there is an insane temperament in the background. From my researches, I learn that it is very rare for the patient to recover from the effects of the anæsthetic with this mental disorder established, or evident to the observer ; but it may come on suddenly or gradually within twenty-four, thirty-six, or forty-eight hours ; or several days or weeks may elapse before its complete development. It is not always after a grave operation that these sequences occur. There may be disease of some of the other organs, or their functions may be interfered with. The inebriate, and persons long addicted to the drug habit, do not bear operations well, as a rule, and these conditions may be put down as predisposing causes of mental alienation after shock from surgical operation.

The antiseptic drugs used for dressing wounds have been accused of causing mental disturbance, but I have never seen a well-authenticated case from this cause. Septic absorption is sometimes an accompaniment, if not a cause. The mental derangement from septicæmia, pure and simple, can, however, usually be differentiated from others. The manifestations of mental disorders following surgical operations usually occur in the form of confusional insanity, mania, and melancholia, while very rarely we may have paranoia and dementia. We can only classify the different manifestations of insanity by their symptoms. The outbreak may be sudden, and may begin with wild delirium ; more frequently it comes on gradually, showing itself as a delusion that cannot be dissipated, and this is followed by incoherent conversation. The patient becomes restless, and is troubled with insomnia. Impatience is succeeded perhaps by

violent excitement, which passes beyond control except by the employment of absolute force; or there may be only fixed delusions and insomnia, which occur in many cases, and are often the first symptoms to attract attention to an abnormal condition of mind. On the other hand, the patient may become quiet, or morose, and refuse to speak, or to notice his surroundings. There may be a moderate rise in temperature, or it may be subnormal. In the violent form, there may be a higher temperature, increased pulse rate, dry, coated tongue, loss of appetite, and impaired digestion, and constipation, with more or less loss of physical power. Acute mania is generally accompanied in the beginning by febrile excitement. If the patient is violent and restless, and labouring under great nervous tension, the functions being all interfered with, the temperature is liable to rise with the excitement and fall with its subsidence. In septic poisoning, and in toxæmias, we always have a greater or less degree of febrile movement. Sometimes after a violent outbreak, with continued excitement for several days, signs of exhaustion appear, and stupidity and coma gradually come on. There can be no difficulty about the diagnosis of mental disturbance, or an attack of genuine insanity, after surgical operations; the manifestations are plain enough, but we cannot always be so positive about the classification of the trouble. The antecedent history is of value in these cases. If there be no hereditary history of insanity, nor a history of a previous attack, there being no organic disease present, and the subject being robust and of good constitution, the prospect for recovery of both mental and physical health is fair. If, however, there is an hereditary, or strongly neurotic tendency, and the patient is in feeble health, the danger is great. Digestive disturbances, feeble pulse, and a tendency to stupidity and coma are always very grave symptoms. The cases of so-called confusional insanity of some modern writers, when there is no organic disease, or septic complications, usually recover after certain lapse of time. Under these conditions the affection is entirely functional, and is not generally dangerous to life. Acute mania, if it does not exhaust the patient, is less unfavourable than melancholia; the former is rather more dangerous to life, while the latter tends to a permanent impairment of the mind. The percentage of recoveries from dementia is small.

The danger to life from insanity, after surgical operations, is probably greater than from any other cause, except malignant disease. Any mental disturbance, coming on after a surgical operation, in a patient who had not suffered from a previous attack, I should look upon with apprehension. Those systems which are poisoned by chronic alcoholism or by the use of drugs do not seem to have the power of resistance that persons do

who are free from the effects of these depressing influences. It is the duty of the surgeon to have this unfortunate complication in mind whenever he decides to perform a surgical operation, whether it be a minor or major one. We should be extremely careful and watchful of those patients upon whom we operate who have an hereditary tendency to insanity, and of those who are unusually nervous, and who submit to an operation with great dread and even protest. Careful preparation should be given them in the way of cheerful surroundings, reassuring conversation, nerve sedation, and plenty of sleep before the operation. Urgent operations cannot be delayed, but the patient can be placed in the best possible physical and mental condition in the short time given for preparation. There are some operative cases in which every moment's delay is a menace to life, and the very best must be made of the surroundings. We should do what we can to fortify the patient with hope and should calm his fears; should avoid making a great display of instruments in his presence, and avoid having too many in attendance. The anæsthetic should be administered in a separate room from that in which the operation is to be performed when this is practicable. When there is no special hurry much can be accomplished by gaining the confidence of the patient, make him even anxious for the operation. Prepare his system and his mind, and relieve him of the great dread of the anæsthetic. Impress those with whom he is in constant contact with the importance of cheerfulness in his presence, and with the necessity of keeping his mind from dwelling upon the ordeal through which he must pass. Encourage him to look forward to it as the only probable means of deliverance from his malady. Much can be done in this way to increase the powers of resistance to any complication that might arise. I believe that by such careful preparation we will be able in many cases to ward off this most unfortunate sequel.—*Medical News, January* 9, 1897.

76.—LAMINECTOMY IN SPINAL CARIES PARAPLEGIA.

By DeForest Willard, M.D.,
Clinical Professor Orthopœdic Surgery, Univ. of Pennsylvania; Surgeon, Presbyterian Hospital, Philadelphia.

I have had considerable experience in the treatment of these cases upon the lines of treatment by rest, by fixation of the spine, by extension in the horizontal position, and by alteratives as well as by laminectomy, and am compelled to say that

thorough enforcement and proper application of the methods named have been successful in a very large majority of cases in securing improvement in a year's time, and that this improvement ordinarily progresses until locomotion of good degree is finally secured. In looking back over the work of thirty years I can recall very few cases which have remained permanently paralysed. The prognosis, judging from my own experience and from that of others, is eminently favourable, but improvement is to be accomplished only by the utmost patience on the part of the individual and his friends, and by untiring watchfulness and much skill on the part of the surgeon. As I have indicated in this outline, radical surgical interference in the shape of removal of the laminæ to relieve the element of compression should not be undertaken until less dangerous forms of treatment have been most assiduously and patiently tried for a long period of time. Formerly it was my rule not to interfere until at least a year of rigid treatment had been tried; now I am inclined to lengthen this period somewhat, and in certain cases to continue it for at least a year and a half, even in the face of non-improvement. I am led to these conclusions, first, by the fact that certain cases do improve, even after a year's apparently hopeless treatment; secondly, by the high mortality of the operation, as shown by statistics; thirdly, by the fact that the temporary improvement accomplished by the removal of the tubercular mass surrounding the cord is, unfortunately, not assuredly permanent, but that an increase in this deposit may reproduce the symptoms in as aggravated a form as before the operation. I do not condemn the operation; on the contrary, I occasionally practice it; in selected cases it has its legitimate place in surgery when other measures fail.

When the operation was first introduced—or I may say revived—some fifteen years ago, the primary brilliant results secured by Macewen, Horsley, and others aroused the hopes of surgeons to a marked degree. My own first operations were so satisfactory as to results that I was greatly encouraged in regard to these cases, which are necessarily most distressing and disheartening. The occurrence of fatal results, however, and the relapse of cases operated upon, led me to examine the statistics more thoroughly in relation to the operation itself and its final results. I must confess that I was dumbfounded when, in a collection of 134 cases secured for me by Dr. Rhein, I found that other operators were no more fortunate than myself, and that the immediate mortality from shock was 24 per cent., and that of those who died within the first month (that is, those whose lives were undoubtedly shortened by the operation) the mortality was 36 per cent.—more than one-third of all the cases. We may, I think, also reasonably infer that the lives of those who

died within the year after operation were probably shortened, and, according to these statistics, nearly one-half (46 per cent.) of the number of cases operated upon have had their lives abridged by surgical interference—a most discouraging mortality for a condition which, while serious, does not immediately threaten life.

It is true that a certain percentage of cases will naturally die from tubercular meningitis, general tubercular infection, septic infection of the cord or system, &c., yet the number of such complications is limited. Taking the published reports, however, which probably represent the best results, about 65 per cent. may reasonably be placed in the category of deaths or "not materially improved." It should be remembered, however, that the condition, on the other hand, is one of great gravity, and that the operation when performed is only employed for the benefit of the most stubborn and intractable cases, whose improvement under ordinary treatment is hopeless. The merits of the operation itself should not, then, be judged by the figures given in statistics. I believe in the operation for certain cases; in fact, I have performed it within the last two months, although, I regret to say, with a fatal result. The case was, however, one of stubborn severity, and, in my opinion, demanded surgical interference. When it is considered, therefore, that only the most hopeless cases are subjected to operation, we must anticipate the improving of only a small percentage of cases.

In regard to the operation itself, I presume that I have performed it as frequently for this condition and for traumatism of the spine as any American surgeon, but abroad the operation has found, especially with Kraske and Lane, greater favour than it has on this side of the Atlantic. I have not found the operation as simple as some writers would indicate. In my first attempts upon dogs and in my later experiments with these animals in spinal surgery, as well as in operating on the human being, I have found the shock very considerable, and if the hemorrhage is great, as is often the case, shock is increased. A surgeon who has performed the operation only in the upper dorsal region realises but little the difficulties that are encountered in the lower dorsal or lumbar region. The great mass of muscles of the erector spinæ group bleed most profusely, and the intraspinal veins also pour out blood in large quantity, adding seriously to the already exhausted condition of these cases. The large amount of hemorrhage is one of the objections to the raising of the osteo-plastic flap, as proposed by Urban. I have tried this procedure twice, but have encountered the difficulties already mentioned. The hemorrhage also delays the operation, which is another element in the production of

shock. I do not think that the replacement of the arches compensates for the objections named. This hemorrhage can be avoided to a certain extent by keeping close to the spinous processes in clearing away the muscles, and is still further lessened by a single incision and the cutting off the several spinous processes *en bloc*, as proposed by Abbe, the connected processes being then slipped to one side to permit the laminal slope to be attacked. I usually make the skin incision a little to one side of the spinous process to avoid cicatricial pressure afterwards. As the hemorrhage is largely venous, packing and catch forceps are usually sufficient to close the vessels and ligatures are seldom required. The only real difficulty in the operation is the removal of the first lamina. Sharp, double-jawed, ronguer forceps work best, but Hey's or other form of short saw may be employed. When once the cord is exposed the other laminæ are easily cut away with narrow ronguer forceps with flat lower blade.

Removal of tubercular material about the cord should be carefully accomplished, but handling of the cord should be avoided. Each manipulation of this structure adds to the shock of the operation, and I have seen most marked alteration of the pulse and respiration during the handling of the cord. No finger but that of the operator should be allowed to touch it, and sponging should be accomplished with caution. When there is anterior bone pressure the cord may be rolled to one side and any sharp projection removed, but extensive attack upon the body of the vertebræ must be done from the side, not across the cord space. Frequently it is impossible to remove all of the tubercular cells, hence a relapse can only be avoided by the removal of posterior pressure and the subsequent improvement of the general condition. Opening of the dura tends to the admission of tubercular cells within the cord.

Conclusions.—(1) Prognosis in pressure paraplegia is hopeful unless the cord has been actually destroyed. (2) Laminectomy for spinal caries paraplegia should never be undertaken until at least one year of persistent treatment by rest, fixation and extension (together with alteratives, &c., has been most patiently tested. (3) The dangers from the operation are shown by statistics to be great, 24 per cent. dying from the immediate shock, 36 per cent. within one month, and 46 per cent. within one year. At least 65 per cent. either die or are not improved by operation. (4) The dangers are hemorrhage, prolongation of the operation, and manipulation of the cord. (5) In spite of these risks the operation has its place in surgery, and is justified in selected cases when persistent and carefully applied measures have failed.—From Dr. Willard's treatment in the *Journal of Nervous and Mental Disease, April*, 1897.

ALIMENTARY CANAL.

77.—EXCISION OF THE TONGUE.

By W. I. Wheeler, M.D., M.Ch. Univ. Dubl.; F.R.C.S. I.;
Surgeon to the City of Dublin Hospital, &c.

[Dr. Wheeler's paper is based on 61 partial and complete excisions. The cases are omitted, as well as some other parts:]

The surgical value of anatomical knowledge appears to me to be primarily twofold—(1) that should one side of the tongue anterior to the foramen cæcum only be diseased, the diseased portion can be completely removed without excising the entire tongue; (2) that both the character of the mucous membrane and the situation of that portion of the tongue terminating at the foramen cæcum render it less likely to be primarily affected, and that disease more usually extends from the anterior portion of the tongue, which is far more liable to irritation on account of its situation and the roughened character of its mucous surface. I have never seen cancer attack primarily that portion of the tongue which is posterior to the foramen cæcum except once. Besides the cancer from direct irritation, syphilitic disease appears to be a potent factor. Stallard, Virchow, and others attribute the increase in cancer of the tongue to smoking, dram drinking, and rough eating. That these produce cancer directly I very much doubt, but they exercise a very potent indirect effect, tending, as they do, like syphilis, to produce a condition of chronic inflammation of the superficial layers of the mucous membrane, which frequently precedes cancer, and may be said to till the soil for carcinoma. Plates and false teeth, and the diseased stumps retained by dentists to afford a better foundation for their work, are not an uncommon cause of irritation and consequent cancer. Smoking is also a cause of irritation, especially the clay pipe, which produces an excoriated surface on the lingual extremity. Heredity has been stated to be a pre-disposing cause of malignant disease of the tongue, but of this I have no knowledge.

From 290 cases from different authors 8 only were between twenty and thirty years of age; their exact age is not stated, so that it is not improbable that they were only just under the age of thirty. After thirty years no one seems to be safe from the disease. Out of 61 cases I operated upon there was not one under forty years of age, and the majority of cases were over fifty-five years, and one only was a female. My experience leads me to believe that the tongue is subject only to the

epitheliomatous carcinoma. No part of the tongue is exempt from carcinoma, but I have never seen the posterior portion of the tongue behind the foramen cæcum primarily attacked by cancer except in one instance, due to syphilitic deposit. In relation to seat, it must not be forgotten that two carcinomas may be developed at the same time on the same tongue. Carcinoma of the tongue may appear as a blister, a crack, a fissure, a wart, a tubercle, a nodule, an excoriation. There is very sufficient evidence that for a lengthened period any of the above forms may remain in the pre-cancerous stage. Clinically, I recognise two forms of epitheliomatous disease on the tongue; one is the flat, the other the penetrating. This division is useful from both a diagnostic and prognostic point of view; for the course pursued by a carcinoma depends much on which of these two forms it happens to be, and also upon the situation. For if the disease commences in the dorsum of the tongue it may never reach the neighbouring structures, whereas if the origin is on the border of or beneath the tongue, the floor of the mouth is rapidly affected. In almost every case which I have seen, which commenced as a general soreness or blister, analogous to the non-penetrating, there was rarely contamination of the glands; whereas when the disease originates as a nodule and breaks down the glands are invariably attacked early. It is by the continuous observance of ulcers of the tongue that an accurate diagnosis can be arrived at and a satisfactory prognosis. Secondary deposits rarely occur when cancer attacks the tongue. Cancer of the tongue may, therefore, be looked upon as a local disease.

The diseases most likely to be mistaken for carcinoma are—syphilis, tuberculous ulcers, simple warty tumours, simple ulcers, fissures. By scraping the surface in doubtful cases and obtaining a microscopic examination, an aid in diagnosis is afforded not to be despised. The subjective symptoms in carcinoma are pain and salivation. The latter may not be troublesome until the disease has made considerable progress, whereas the former may be present at the very earliest period of the disease; these symptoms are likewise present in tuberculous ulcers. To the above symptoms may be added enlargement of the glands beneath the jaw and of the lymphatic glands. The glands may be so large as to be plainly visible, but often have to be sought for, and sometimes they are not enlarged at all. Out of 61 operations performed by me for malignant disease none died from the effects of the operation save one, a male, on whom I operated by Köcher's method modified; he died of asthenia. I did not tracheotomise him. Of the 61 cases, in 29 I believe the disease returned. Many of these

operations were performed, not with a view to cure, but merely to relieve, and remove a foul, sloughy, fœtid mass, and thus render existence more tolerable; 22 others I have not been able to trace at all directly myself. I heard indirectly that five were healthy three or four years after operation.

The remaining that I have information of are as follows:—(1) No return 1 year after operation. (2) No return 11 months after operation. (3) No return 13 months after second operation. (4) no return 18 months after. (5) No return 3 years and 9 months after. (6) No return 6 years after; died of other disease; 73 years. (7) No return 15 years after; I believe now alive. (8) No return 7 months after. (9) No return 3 months after; now in hospital. (10) No return 2 months after operation. The three latter recorded are too recently operated on to form any definite opinion as to their immunity from disease. There is only one prognosis for unoperated lingual carcinoma—death; and a like prognosis for a large number of operated cases. That complete recovery does take place is undoubted, as proved by my cases. Mr. Heath had patients alive eleven and five years after operations, and similar surgical records are extant. Operations on the tongue and in the mouth usually heal kindly.

I have considered it expedient to ligate the external carotid before removing the tongue tonsil and part of the palate, but preliminary ligature of the lingual arteries in excision of the tongue, as recommended by Mirault, is not required; there is no hemorrhage from the ranine arteries to cause alarm, and as the operation upon the tongue is frequently postponed until the wounds for deligating the lingual vessels heal, the disease in the mouth is increasing and may be infecting the patient. So likewise when the glands beneath the maxilla are removed before removing the diseased tongue, the operation on the tongue is often postponed until the wound made to remove the glands has healed; the longer the foul diseased tongue remains unremoved the chances of septic contamination increase. True, there are some cases where glands are never contaminated in lingual cancer; in its early stages it is a purely local affection; but in cases where the salivary glands are enlarged I am convinced that it is better surgery to excise the cancerous tongue first, and after the diseased glands. The submaxillary glands may be enlarged through the connective tissue or by septic or sympathetic influences, and when the diseased tongue—the source of irritation—is removed the glands will usually subside a little, and can be more perfectly and completely extirpated, and the connective tissue will be a guide to the lymphatic glands deeper in the neck, where the lymphatics directly communicate.

The proposition to examine all the lymphatic regions for all the lymphatic glands that may be engaged in cancer of the tongue is not practical and savours of inexperience. There is no analogy in clearing out the axilliary glands in cancer of the breast. Köcher removes the glands at the time of operation. He also recommends a preliminary tracheotomy, which, in my opinion, is as unnecessary a procedure as preliminary ligation of the lingual arteries through fear of hemorrhage. I have seen only two tracheotomies preliminary to the operations on the tongue, and both cases died. Tracheotomy subjects the patient to an additional operation without any compensation for the consequent loss of strength and power. When the tongue only is engaged, and to a limited extent, it can be removed through the mouth. When the floor of the mouth is engaged more room will be required. I have performed nearly all the recent recognised operations for lingual cancer or modified them. I prefer the thermo-cautery scissors when suitable. It will be found an admirable instrument in the majority of cases of lingual cancer should the disease be not too extensive. The scissors, a gag, a long needle, ligatures, a scalpel, and a few hæmostatic forceps and sutures are all that is required; there is no bleeding except from the ranine arteries ; this is to be encouraged. I never use a ligature through the tongue ; the operation can be performed through the mouth, but if further room is necessary the cheek may be split. The tongue is held by a toothed lingual forceps, and the cold blade of the scissors is passed under the surface of the tongue, while the heated blade cuts through the tongue from the upper surface. Just as the ranine arteries are about to be severed the hot blade is allowed to cool a little in order that the vessels may bleed ; they are secured by a hæmostatic forceps and ligatured. This completes the operation ; there is no charring of the structures unless the instrument is too hot. In a large portion of cases this procedure will be found efficient and sufficient.

In conclusion, I would wish to emphasise the necessity for the most careful attention to the condition of the mouth and diseased surfaces prior to and after operation. The strictest cleanliness should be observed ; the mouth should be douched and sprayed frequently before the operation, and equal care and supervision should be exercised after the operation. I feel that many cases are lost through septic influences for want of this attention. I have never found it necessary to dress the mouth with gauze, as advised by some. After the operation I have the patient fed partly by the rectum, and through a tube attached to an ordinary feeding-cup, but the greatest care and regularity are given to douching and washing out the mouth.—*Dublin Journal of Medical Science, April*, 1897.

78.—REICHEL ON THE AFTER-TREATMENT IN CASES OF ABDOMINAL SECTION.

Though the after-treatment after abdominal operations has undergone a great change at the hands of modern surgery, still the fact that there yet remain certain differences of practice among surgeons indicates that it is still an unsettled question. From the earlier policy of maintaining intestinal quiet with opiates to the ultra-active policy of purgation the lines of surgical practice have differed widely. No surgeon has done more than Reichel (*Verhandl. der deut. Gesellsch. für Chirurgie*, XXIV. Kongress, 1895), to separate the valuable parts of each of these two different policies, and find their most useful application. He observes that while the technique of laparotomy among all surgeons is practically the same in its main points, the after-treatment is almost diametrically different. He has asked two questions, (1) under what conditions is opium indicated after laparotomy? and (2) what are the indications for re-opening the belly?

Reichel observes that the use of opium in the treatment of peritonitis originated in the theory that by keeping the bowels perfectly quiet in case of peritonitis, the spread of the disease could be prevented, and that thus the use of opium would prevent a general peritonitis. In this way opium came to be used almost universally. It has been pointed out that a local inflammation becomes a general inflammation by a dislocation of the localised organisms from the primary focus out into the sound tissue. For this reason opium was given in large doses; for it was known that even under strict aseptic precautions pathogenic organisms might become lodged in the abdomen. The greater the absorbing power of the peritoneum, the sooner will the bacteria be rendered inert. This absorbing power is increased not by quiet, but by peristalsis. In the normal progress of a case after laparotomy there is no indication for the use of opium. Of course there are special exceptions to this, for example (according to Reichel), after operation for appendicitis when a local infection exists, and in cases of intestinal resection in which for the sake of security to the suture it is important to keep the gut quiet.

Reichel has pointed out that opium masks the symptoms of a developing intestinal obstruction, and thus prevents the timely application of operative interference. It is also true that it directly favours the formation of adhesions and the development of ileus. It is not the quiet of the intestine which causes the adhesions between them, but injury or loss of the peritoneal epithelium. These adhesions depend less upon the after-treatment than upon the operative technique, but there is no operative

technique which will entirely prevent them. They are usually the cause of intestinal obstruction through angulation. As a matter of fact, adhesive angulation never is alone the cause of total mechanical obstruction. The presence of inflammatory deposit causes more or less circular compression of the gut and damage to its motor power, probably by paralysing the motor nerves by compression at the place of angulation, and by stretching of the nerves above the point of constriction. Increase of the peristaltic action above this point only aggravates the distension. The use of purgatives in case of angulation due to adhesions, coming on some days after laparotomy, is usually of no value. Repeated washing-out of the stomach and the use of opium, better than any other line of treatment, relieve the dangerous acute distension above the angulation. Reichel shows that its use is rational and practicable, and is often not only palliative but curative as well. Opium is further of value in cases of infective peritonitis in which the infective foci are confined by adhesions, and in which the chief danger is a rupture of the adhesions and extension of the disease. In case of acute ileus following laparotomy, neither opium nor purgatives are of use; the best chance of recovery rests in the early diagnosis and operative relief. In such cases, the use of medicinal agents which obscure the symptoms are to be guarded against. Reichel teaches that in such cases opium is alone indicated, and purgatives are contra-indicated by the symptoms of infectious peritonitis.

The indications for re-opening the abdomen are by no means yet agreed upon among surgeons. The only thing upon which surgeons are agreed is the presence of intra-abdominal hemorrhage; there is a vast diversity of opinion concerning ileus and peritonitis. The difficulty of deciding lies in the diagnosis,—that is, in the difficulty of distinguishing between intestinal obstruction and peritonitis. During the last few years peritonitis has often been subjected to surgical treatment; but the practice of indiscriminate re-opening of the belly can only bring the operation into discredit. It is desirable that certain groups of cases be governed by fixed therapeutic rules. From a purely practical stand-point Reichel divides the cases into two groups. The division, which is hardly a scientific one, is as follows:—(1) such cases as from the beginning are without fever; and (2) such as run a febrile course. Notwithstanding the many exceptions, in general fever signifies infection and points to peritonitis, while its absence indicates obstruction. Of course the other symptoms of these two conditions must not be lost sight of.

Reichel says that when the symptoms of intestinal obstruction begin acutely and relatively late, from the tenth to the fourteenth day or later after an abdominal section, after a non-febrile

course, or when they suddenly and violently begin on the first day after the operation, the condition is almost unquestionably one of pure mechanical obstruction, which must be treated by mechanical means at the earliest moment. Subacute development points more to adhesions and angulation. In such case opium is often of use. But the case must be watched very closely for the appearance of objective symptoms of complete obstruction, and to avoid overlooking a change of the symptoms for the worse. If betterment is not observed within twenty-four or forty-eight hours, laparotomy should not be delayed. The condition may be mistaken for pseudo-ileus, but the early and pronounced increase in the frequence of the pulse in the latter is of great value in the differential diagnosis. In cases of peritoneal infection, operative interference is useless and contra-indicated when the peritonitis is a general one and not confined by adhesions. Operation can do good only when there is a circumscribed imflammation. Often the symptoms of such a condition resemble the symptoms of intestinal obstruction, differentiated usually by the presence of fever. It is a matter of the greatest importance to differentiate between general peritonitis and peritonitis with adhesions. The hope of therapeutic procedure depends upon such a differentiation. Many signs must be considered ; but briefly it may be stated that in the first condition the symptoms of a general infection prevail, and in the second condition the symptoms of a local inflammation prevail most prominently. In all cases of peritoneal infection, Reichel recommends that, first, an energetic opium treatment should be pursued, in order to localise, if possible, the septic process. When the diagnosis of localised suppuration has been made, whether positively or with the suggestion of intestinal obstruction, laparotomy should at once be performed. In such case the infection is no contra-indication to operation. The treatment must be active and radical.—Dr. James B. Warbasse's article in *The Annals of Surgery*, *January*, 1897.

79.—TWO CASES OF PERFORATED GASTRIC ULCER SUCCESSFULLY TREATED BY ABDOMINAL SECTION.

By H. Littlewood, F.R.C.S. Eng.,
Surgeon to the General Infirmary, Leeds.

[The following is taken from Mr. Littlewood's paper, certain omissions having been made owing to want of space :]

Case 1.—The patient, a girl aged 18 years, was suddenly seized on May 2, 1896, at about 10 a.m., whilst at business, with intense pain in the upper part of the abdomen and a feeling of faintness. She went to bed and

had some hot flannels applied. Feeling better the next day, Sunday, she went twice to chapel, and on the following day went to business. At 10 a.m. she was again suddenly seized with very severe pain in the epigastrium, and became greatly collapsed. She was at once put to bed, and soon after seen by Mr. Byrd of Pudsey. The patient was then in great pain. Her temperature was 96° F., and she was cold and sweating. I saw the patient about 4 p.m. At this time she had recovered to some extent from the collapse. The abdomen was greatly distended and resonant; there was resonance over the hepatic region in front. The breathing was thoracic. The diagnosis made was that some peritoneal catastrophe had occurred, probably the perforation of a gastric ulcer. The operation was commenced about 5 p.m. On opening the peritoneum some odourless gas at once escaped and the omentum presented; this was inflamed and in it in parts there were patches of purulent lymph. The free edge of the omentum was turned up and revealed some coils of small intestine; some of these were found distended, and on them were small flakes of purulent lymph. The pelvis and cæcal region were explored and nothing abnormal was found; a sponge was then packed into the lower part of the abdomen and the incision prolonged upwards for about four inches in the middle line. A small perforated ulcer was soon found in the anterior wall of the stomach, apparently situated about equal distance from the two curvatures and nearer the pyloric than the cardiac orifice; from the perforation the fluid contents of the stomach were welling up and running over the omentum and down into the right side of the abdomen. There was purulent peritonitis: this was chiefly limited to the anterior surface of the stomach, great omentum, some of the small intestines in contact with its under surface, and the viscera on the right side of the abdomen. These parts were all carefully sponged, the sponges being washed in boiled salt solution. The ulcer was then excised by an elliptical incision and the aperture closed by five fine silk Lembert's sutures. The perforation was about one-tenth of an inch in diameter. At this stage the patient became very collapsed, so the anæsthetic was discontinued and some brandy given hypodermically. The parts affected by acute peritonitis were again carefully sponged and a large Bantock's tube put down to the right side of the abdomen and the abdominal wound sutured. Nothing was given by the stomach for the first week; the patient was fed every four hours by the rectum with peptonised milk and a small quantity of brandy. The mouth was washed out frequently. After this she was fed by the mouth—at first small quantities of milk and water, then Benger's food, &c. There was never any vomiting. The tube was emptied at first night and morning, and then more frequently; the discharge was at first blood-stained and turbid, later becoming purulent. On May 11 the glass tube was removed and a rubber tube inserted, and the abdominal wound was dressed. It was practically healed. On May 13 the patient complained of a good deal of abdominal discomfort and at night a considerable quantity of foul-smelling discharge escaped through the tube. The next morning the cavity was well syringed out with a solution of creolin, and this was repeated every two hours. Within forty-eight hours the discharge had greatly diminished and become sweet. The tube was finally removed on May 20, and the wound healed a few days later. On May 21 evidence of thrombosis in the right femoral vein appeared. The patient got up on June 11, and made a good recovery.

Case 2.—The patient, a girl aged 18 years, was seized suddenly whilst at business at 9 a.m. on July 21, 1896, with intense pain in the abdomen, and was greatly collapsed. About an hour later she was seen by Mr. Woodcock, of Holbeck. Diagnosis of perforated gastric ulcer was made and arrangements made for operation. Some time previously Mr. Mann, of Holbeck, had on two occasions attended her for very profuse hæmatemesis. I saw her with Mr. Woodcock at 2.30 p.m. She was then greatly relieved, and recovering from the collapse. The pulse was quick, but of good quality. Respirations were entirely thoracic. The abdomen was distended and resonant. There was resonance over the hepatic area in front. She complained of some pain in the abdomen, which was most marked in the lower part of the umbilical region. Agreeing with the

diagnosis I commenced to operate at 3 p.m., and opened the abdomen in the middle line just above the umbilicus. Some odourless gas escaped on opening the peritoneum and some yellowish-white semi-purulent fluid. This opening exposed a perforated gastric ulcer, which was situated in the anterior wall of the stomach near the lesser curvature, and about three inches from the pylorus. The aperture of the ulcer was about one-third of an inch in diameter, the edges were greatly thickened, and near the right side of its edge was a strong fibrous adhesion fixing the stomach to the anterior abdominal wall. The ulcer was excised by an elliptical incision and the edges of the opening sutured by seven fine silk Lembert's sutures, including the whole thickness of the gastric wall with the exception of the mucosa. The peritoneum was carefully wiped out with sponges wrung out in sterilised salt solution. The anterior wall of the stomach, the great omentum, and the viscera on the right side were the parts over which the fluid contents of the stomach had been mainly distributed. These parts were roughened and injected, and in several places there were flakes and patches of purulent lymph. There were several small purulent nodules in the omentum ; some of these were wiped off, some removed with the nail, and others must have been left behind. A large size Bantock's tube was placed down to the right side of the abdomen and the incision closed in three layers, fine silk being used for the peritoneum and muscles, and silkworm gut for the skin. The patient stood the operation well. A brandy enema was given as the abdominal wound was being stitched up. The after-treatment was carried out by Mr. Woodcock. The Bantock's tube was emptied at first every four hours, a few drachms of serum being removed each time. On the eighth day the fluid removed was purulent, but smaller in quantity. On the tenth day the sutures were removed from the abdominal wound, and a rubber tube substituted for the glass one. Rectal feeding was carried on for the first fortnight. At the end of the fourth week the drainage-tube was taken out, and at the end of the fifth week the abdominal wound had healed. The patient was then allowed to get up. The temperature ranged between 100° and 103° until August 1; from this date until August 13 it varied between 98·4° and 99°, and after that was normal.

The most important factor contributing to a successful result is undoubtedly an early diagnosis, so that the operation can be performed within eight or ten hours of the rupture. The best way of treating the ulcers is a point for discussion. In these cases excision was very quickly and easily done, and it appears to me to be an advantage if possible to remove the edges of the ulcer, especially if they are at all indurated. I can quite conceive cases in which excision may not be practicable, and one must be contented with inverting the edges and bringing the two serous surfaces in contact. The treatment of the peritoneum when there is purulent peritonitis is still under discussion. Should you wash out? Should you wipe out? Whichever plan you adopt it appears to me a physical impossibility to thoroughly cleanse the peritoneum. In both these cases the omentum was infiltrated with small purulent nodules, and certainly some septic material was left behind. Up to a certain point I imagine the peritoneum is capable of dealing with this. Another point for discussion is how soon should you give fluids and foods by the mouth. Some surgeons begin to feed much earlier than I did in these cases, and perhaps they are right.—*The Lancet, November* 21, 1896.

80.—PYLORECTOMY FOR CARCINOMA.

By L. A. Dunn, M.S.

[The following are Mr. Dunn's remarks on a case in a man, aged 56, successfully operated upon on October 9, 1896. Unfortunately, the great obstacle to successful operative treatment is the difficulty, and, indeed, almost impossibility, of early diagnosis. By the time the diagnosis is obvious the disease is already advanced, usually with numerous adhesions, and not infrequently secondary growths. We ourselves saw a case a short time ago where the pyloric tumour was most extraordinarily movable. Pylorectomy was performed. A large gland, which proved to be carcinomatous, was found at the necropsy near the bifurcation of the aorta. Thus, notwithstanding the labours of Boas, Rosenheim, and others, really early diagnosis is as yet almost out of the question, and, indeed, in the early stages of carcinoma of the stomach there may be hardly any symptoms.—E.F.T.]

This case was an eminently suitable one for operation. The growth was limited and freely movable. No secondary deposits were seen ; but, on the other hand, no especial search was made for them, since it was quite evident to all who saw the case that the patient would speedily die of starvation unless some operation for overcoming the obstruction were performed. The employment of Murphy's button in this case was suggested to me by Mr. Arbuthnot Lane. The great point in its favour is the rapidity with which the operation can be completed. There was no great difficulty in the operation from start to finish, and the reason why the operation lasted rather more than an hour from the commencement of the anæsthesia can be accounted for by the following circumstances :—Firstly, time was lost in restoring respiration, which had ceased almost at the outset of the operation ; then the snapping of the purse-string suture around the duodenum necessitated delay during its re-insertion ; so, too, in the case of the accidental split in the peritoneum at the site of puncture on the anterior wall of the stomach, where a purse-string had also to be inserted, although it was hoped that by adjusting this portion of the button in the manner previously described the suture would be dispensed with ; finally, from want of experience in this operation our manipulations were more tardy than usual. Whilst considering the advantage of employing Murphy's button in this case, the question arose as to whether the acid of the gastric juice might not erode the screw arrangement of the button, and thus allow the two portions to become separated. To obviate this contingency it was thought wise to have the screw gilded ; but on discussing the matter with the physiologists it seemed clear

that this precaution would be unnecessary owing to the very small amount of hydrochloric acid which is secreted by a stomach the subject of chronic dilatation. Another source of doubt was as to the passage of the button; would it when detached drop into the stomach and remain there? or would it get hitched up during its passage along the tortuous duodenum? To overcome the first possibility the idea suggested itself of attaching the button to the lower end of a long, stout silk thread, passed into the stomach from the mouth at the time of the operation; so that, when the button became free, it might be drawn up through the œsophagus by making traction upon the free end of the silk, which would have been left hanging from the mouth. This plan was rejected, as it would probably be very difficult to detect the separation of the button; and it was uncertain, too, whether the œsophagus would allow a foreign body to be dragged out in a direction contrary to that usually taken. The other possibility was dismissed by recollecting how rarely a gall-stone becomes impacted in the duodenum. It was expected that the button would be passed upon the sixteenth day, judging from the experience of a previous case of the author's (*Guy's Medical Reports*, 198, vol. cxlii., part ii.), in which the stomach was united with the second coil of the jejunum, and the button took a fortnight to pass. In the present case the computation was approximately correct, as the bowels, which had previously been acting regularly, were opened upon the fifteenth day and not again till three days later, when the button passed. Had the button not made its appearance we intended to attempt to discover its situation by means of the Röntgen rays.

The continuous suture was used in order to save time, and when arranged, as in the above case, viz., two longitudinal separated by a middle transverse one, it closed the opening in the stomach very securely. The only bleeding of any importance during the operation was from the divided gastric mucous membrane, but this was speedily checked by the suturing. There was no difficulty in opposing the duodenum to the anterior wall of the stomach, owing to the enormous dilatation of the latter. The anterior wall was easily pulled up, and when united to the duodenum remained in position without any strain. We could not account for the sudden increase in the pulse-rate. Some thought as the patient was having thin nutrient enemata in the twenty-four hours, each containing one ounce of brandy, one egg, and peptonised milk to four ounces, that the increased rate was due to the brandy; others were of the opinion that the rapidity was due to insufficient food. Both suppositions seem to have been incorrect, as the brandy was diminished and the feeding by the mouth increased without

any marked result. Possibly it was due to irritation of the button, as this would probably be starting on its downward journey at the end of the first week, and would thus correspond to the time when the rise took place. In conclusion, I must thank my colleague, Dr. Washbourn, for his advice in this case and his presence during the operation, and Mr. Arbuthnot Lane for suggesting the advantage of using the button in similar cases.

Since writing the above I find that Dr. Murphy has described the operation of pylorectomy with the use of his button, and mentioned some successful cases (*Lancet*, January, 1895, p. 1040). His mode was almost precisely like the above, except that he joined the duodenum to the posterior wall of the stomach. I chose the anterior wall, as it seemed to come more readily to hand. I can fully endorse all he says as to the simplicity of the operation, and only regret that, having overlooked the article, I was unable to profit by his experience.—*Guy's Hospital Reports*, *Vol.* 37, 1896.

81.—APPENDICITIS WITH GENERAL PERITONITIS.

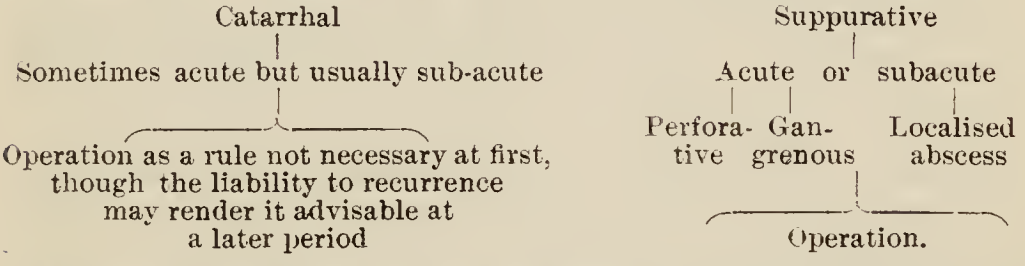
By Mayo Robson, F.R.C.S.,
Senior Surgeon to the General Infirmary at Leeds, &c.

[Mr. Robson's paper is based on a remarkable series of twenty cases operated upon during the year with only one death. They include cases of all degrees of severity, some being complicated with general peritonitis. The details of the cases and other parts have had to be omitted.]

I think it will be found that the division of cases into acute and subacute will serve a more useful purpose than to speak of catarrhal, ulcerative, and infective, or of endo-, parietal-, peri-, and para-appendicitis. The most important points to settle in any given case of appendicitis are :—(1) Ought an operation to be done? (2) if so, when? It may sound somewhat radical, but I speak from conviction after considerable experience, when I say that I believe the early operation, undertaken as soon as appendicitis is diagnosed, first advocated by Dr. McBurney, would lead to a far greater percentage of recoveries than the method of individualising which we in England still adopt, and which we seem likely to continue. Whilst it is convenient to make the clinical division before operation, it is quite easy to divide the cases subsequently into :—(*a*) Catarrhal, as instanced in five cases, which are good examples of recurrent appendicitis; and (*b*) suppurative, either without perforation, as in six cases, or with perforation, as in eight cases, or

associated with gangrene without perforation. Catarrhal appendicitis furnishes the greater number of cases of recurrent appendicitis, and this is the variety which may, and usually does, recover without surgical treatment, though, while the first and second attacks may be catarrhal and end in resolution, the next seizure may assume the suppurative form and produce general peritonitis, demanding operative interference, and as in one case, where the first attack was catarrhal and the subsequent attack suppurative, requiring operation. Suppurative appendicitis may run an acute or a subacute course, but whatever form it assumes, whether with or without perforation, or with or without gangrene, it demands operation, which, in my opinion, should be advised at the earliest possible moment, that is as soon as a probable diagnosis is arrived at.

I have never regretted operating, but I know of several calamitous cases where delay, at the request of the patient or his family, has led to a fatal termination which might probably have been avoided had operation been more strongly urged. This simple classification into catarrhal and suppurative, which is closely related to the clinical division of acute and subacute, is the first step to enable us to arrive at a decision with regard to operation. It is simply shown in the appended chart :—


Catarrhal
Sometimes acute but usually sub-acute
Operation as a rule not necessary at first, though the liability to recurrence may render it advisable at a later period
Suppurative
Acute or subacute
Perfora-tive
Gan-grenous
Localised abscess
Operation.

I always look on an acute onset, with a rapid pulse and tenderness over the appendix without the presence of a tumour, as indicating the need for immediate operation. A more gradual commencement with a quiet pulse (not over 100) and the early formation of a tumour, are signs that delay may be safe. If in the course of an appendicitis at any stage a rigor with rise of pulse and temperature occur, operation should be advised, as it indicates septic absorption. The temperature alone is very little assistance, the pulse being the true guide for treatment. Opium may so disguise the pulse-rate, thus leading to serious or even fatal delay, that I feel sure we best consider the welfare of the patient by trying to give relief in other ways, until the condition to be dealt with has manifested itself. If opium has been given it will be advisable for the surgeon to reserve his opinion, and if on withholding the sedative for a few hours the pulse has increased in frequency, and anxiety of countenance has declared itself, operation will be required. Relief or cessation of pain with a marked rise in pulse-rate

is an indication for immediate operation, as it not infrequently indicates gangrene of the appendix. Distension of the abdomen with vomiting and rapid pulse are signs that admit of no delay, as they are indicative of extending or of general peritonitis. In formulating rules like those I have just mentioned I feel that I owe an apology to my audience for entering into so much detail ; but if we uphold the principles of individualising, we must try to formulate some rules to guide us as to when we may use and when withhold the knife. As to the time when operation should be done, in the subacute or catarrhal forms the quiescent period, as advised by Mr. Treves, is undoubtedly the safest, and any time after the more acute symptoms have subsided may be selected. Probably from two to four weeks after recovery from an attack will be found the best. I suppose we can all point to cases where a patient has had an attack of catarrhal appendicitis ending in complete recovery without recurrence, therefore those who advocate delay have reason on their side ; but I do most strongly uphold that after a second attack operation should be decidedly urged, as repeated seizures will certainly recur, and from being catarrhal may become suppurative.

In operating, ought we always to remove the diseased appendix ? My own feeling is that, with few exceptions, the operation should be made complete by removing the origin of the trouble. My method of procedure in such cases is to evacuate very thoroughly and cleanse the abscess cavity as soon as pus is reached, and then to carefully follow the longitudinal band on the cæcum, if that can be seen, as it inevitably leads to the appendix. This can usually be removed without greatly disturbing adhesions ; but, even if adhesions be broken down and the general peritoneal cavity be exposed, no harm will as a rule follow if the parts be isolated by sponges. If the cæcum is covered by inflamed omentum or adherent intestine, so that the longitudinal band cannot be seen, the finger in the abscess cavity will frequently recognise the hard, rounded appendix, which can then be detached without much disturbance of adhesions, or, as not infrequently happens, the perforated or gangrenous appendix may be found projecting into the abscess cavity, when it can be easily removed. If, as rarely happens, none of these conditions be found, I would on no account advise a prolonged search, as such would undoubtedly increase the risk of the operation. Besides the manifest advantage of removing the danger of subsequent attacks, the removal of the appendix *(secundum artem)* takes away the danger of fæcal fistula ; and not infrequently the judicious search for the damaged organ leads to the discovery of other collections of pus, to leave which would be highly dangerous and very unsatisfactory.

In operating where there is general infective peritonitis we must be prepared to lose many patients, even if the operation be undertaken in a fairly early stage ; but in the later stages, when distension is well marked, and the pulse is becoming very rapid, the percentage saved will be very small. I have been fortunate in saving five out of six cases of this kind on which I have operated during the year, and I feel that it is a much larger percentage of recoveries than one might reasonably expect. As although there ought to be no mortality in operations undertaken in the quiescent period, and a very slight one in acute suppurative cases, where the area of suppuration is limited, we can scarcely venture to predict that we shall always be able to save 82 per cent. of the cases of appendicitis if accompanied by general suppurative peritonitis. In such cases I believe in very free irrigation with plain boiled water, or with weak boracic lotion, and in very free drainage by several large rubber tubes. The incision I usually employ is one of 2 to 3 inches, slightly curved, and a little to the inner side of the anterior superior spine of the ilium, higher or lower according to the position of the tender spot known as McBurney's point, which is nearly always a true guide to the root of the appendix. When I can I adopt McBurney's method of separating muscular fibres instead of dividing them ; this can always be done so far as the external oblique is concerned, and often in the case of the internal oblique.

In removing the appendix when I can I ligature the mesentery with catgut and then make a circular incision through the peritoneal coat, folding this back like a cuff. I then ligature with catgut the muco-muscular portion and amputate it. After purifying the stump, iodoform is applied, and the peritoneal cuff turned back and ligatured over it. If the appendix be removed close to the cæcum, I ligature the stump if possible and invaginate it into the cæcum, applying Lembert's sutures over all.

If the appendix is too much disorganised to bring to the surface, and it is undesirable to disturb adhesions, I simply apply a catgut ligature around the whole organ and cut off the part beyond the ligature. In only one of the cases was there any subsequent fæcal discharge (and that only for a short time) from the wound, showing that these methods were efficient. In closing the abdomen I suture peritoneum to peritoneum and muscle to muscle by catgut, using silkworm gut for the superficial structures. Union usually occurs by first intention, except where the drainage tube was, and there is very seldom any yielding of the scar or development of hernia.

With regard to the use of drainage tubes, I seldom drain when I operate on the catarrhal form, but in the acute form,

when there is a septic cavity, I usually drain freely after purifying the cavity by sponging and applying iodoform to the septic lining of the abscess.

In 10 out of the 20 cases fæcal concretions were found, and in one case a small gall-stone was discovered in the appendix. In no fewer than nine of these cases there were associated perforation and gangrene. In two cases there were concretions present, though the form of appendicitis was catarrhal and recurrent; and these would doubtless, if left long enough, have ended in perforation. In spite of what a distinguished authority has said on the subject of concretions, in these cases I cannot help feeling that the concretions and perforation bear the relation in many cases of cause and effect.—*British Medical Journal, December* 19, 1896.

82.—CANCER OF THE RECTUM.

By James P. Tuttle, M.D., New York.

[Only the parts of the paper dealing with the post-operative period and the general conclusions are quoted here.]

(A1) POST-OPERATIVE PERIOD.

(1) *Retention and suppression of urine.*—The former is quite a frequent occurrence, in this as in all rectal operations. It is generally temporary, although Boeckel and Jaennell have reported cases which lasted, one a fortnight and one a month. The condition is identical with that which follows a simple operation for hæmorrhoids and is due to the same cause, namely, spasm of the sphincter vesicæ produced by the reflex irritation from the rectal wound. Suppression of urine has been the cause of two deaths from this operation. Shock and the prolonged etherization were probably the cause of the suppression, together with possibly some obscure nephritis before operation.

(2) *Secondary hemorrhage.*—Morestin says this occurs when the inferior mesenteric artery is cut, because it retracts greatly. It occurs to me that such a vessel would bleed at once and not secondarily. This could only happen when the gut was not sutured, as in the latter case the vessel would almost surely be held by the threads. The general oozing is sometimes considerable, but I have never seen it alarming.

(3) *Pain.*—After the third or fourth day the patient suffers very little pain from this operation. If the bowels are controlled and the wound is not irritated by fæcal discharges, morphia is rarely necessary.

(4) *Suppuration.*—This necessary feature in the majority of these operations may be greatly limited by careful dressing.

The later it develops and the less profuse it is, the more rapidly will it cease and the sooner will the wound heal over. A solution of ichthyol 10 per cent. in glycerine has served me better for this purpose than any other. Prolonged and excessive suppuration may lead to exhaustion or to amyloid disease, and hence it requires the closest attention. Perfect drainage of all the parts, putting the patient on his feet as soon as possible to assist in this and to relieve pressure on the wound, are important adjuncts in the treatment which must be carried out in the most antiseptic manner.

(5) *Sepsis.*—Local or general sepsis may develop any time after the operation. It manifests itself generally in the peritoneum at first and may occur at once or several days after the operation. It may be active and virulent or obscure, and resembling shock. Because there is no tympanites we should not conclude that peritonitis is absent. In the cases reported it was the cause of death in eight instances. I have already stated my own views as to its cause, and having escaped it in my operations thus far, I feel justified in reiterating this opinion axiomatically. Keep the fingers out of the rectum, and do not open the gut until the peritoneal cavity has been closed.

(6) *Necrosis of the bone.*—This result of the Kraske method has occurred a number of times, but it has never seemed to present any serious complications. The non-union of the bones may take place, and the fragments may be eliminated in their entirety after the osteo-plastic operation. Immediate suture of the bones has not proved satisfactory to those who have practised it. The preservation of the soft parts attached to the bone is the only method to guard against this complication.

(7) *Gangrene.*—Morestin makes a logical division of the subject into:—1, gangrene from ischæmia; 2, gangrene from sepsis; 3, gangrene from nervous origin. The local anæmia or hæmostasis is, without doubt, the most frequent cause of this complication. The practice among some operators of cutting off the mesorectum close to the gut is very likely to cause it, as the superior hæmorrhoidal artery is included in the folds at this point, and if that vessel is cut off all the gut below will necessarily slough. Pulmonary, nephritic and cardiac complications occur in the post-operative period in this as well as in all other major operations. They present no unusual manifestations, and we will not discuss them here.

(8) *Fistula.*—Fistula is a very frequent sequence in resection. It comes from the point of suture through the lower angle of the sacral wound. There were four of these in the private cases reported above and two in my own patients. One was sewed up twice, but the operation failed. They all healed, however, under simple local treatment.

(B) CONCLUSIONS.

(1) Cancer of the rectum can be cured in over 10 per cent. of the cases. (2) The mortality from the radical operation, though still considerable, is not alarming, and is decreasing with every year's experience. (3) The radical operation prolongs life on the average over 100 per cent. (4) As a palliative measure, excision is far more successful and beneficent than any other measure. (5) The sequences, though numerous, are not at all intolerable, and should weigh little in our considerations when it is a question of so serious a disorder as cancer of the rectum.—*Journal of the American Medical Association, April* 3, 1897.

83.—THE RADICAL CURE OF HERNIA.

By WILLIAM B. COLEY, M.D., of New York City, Assistant-Surgeon to the Hospital for Ruptured and Crippled, &c.

[This paper is based on 360 cases. The following is an excerpt from it :]

The 360 operations were divided as follows :—For inguinal hernia, 326 ; femoral hernia, 25 ; umbilical hernia, 6 ; ventral hernia, 3 ; total, 360.

Methods of operation.—Inguinal hernia :—Bassini's method with kangaroo tendon, 300 cases with two relapses ; Bassini's, with silk sutures, 1 case with one relapse ; suture of the canal without transplantation of the cord, 24 cases with three relapses. Femoral hernia, 25 cases, no relapse, no mortality ; Bassini's method for femoral hernia, 10 cases, no relapse ; high ligation of the sac with purse-string sutures of canal with kangaroo tendon, 15 cases, no relapse. Inguinal hernia in the female :—Fifty-five operations were performed for inguinal hernia in the female with no mortality and no relapse. Umbilical and ventral hernia :—Nine cases were operated on, with four relapses ; five of these cases occurred in stout women and four have since relapsed, all within seven months time of operation, and the fifth has not been traced. My 250 cases of hernia in children under 14 years of age treated by operation were selected from about 7,000 cases of ruptured children under 14 years of age.

When to operate.—I believe it to be a good rule never to advise the operation in children until a truss has been tried for a reasonable time (*e.g.*, one to two years) without benefit. There are important exceptions to this rule. In femoral hernia operation can be advised at once, for the reason that the chances of cure by means of a truss are too slight to be considered.

Irreducible or adherent omentum and reducible hydrocele may furnish sufficient reason for early operative interference. There are, furthermore, a number of cases, especially in dispensary practice, where the rupture cannot be satisfactorily retained on account of insufficient care, and such cases may with profit be subjected to immediate operation. In regard to adults, operation may be advised in most cases of inguinal and femoral hernia up to the age of 50, unless some contra-indications exist. I would caution against operating on very large irreducible hernia, especially in stout persons. The operation is a formidable one, on account of the numerous adhesions and the necessity of ligating large masses of omentum, and aside from the danger attending the operation itself, my observation of the final results of operation in such cases has convinced me that few are permanently cured. Inguinal hernia in women yields practically perfect results, at least when operated upon by Bassini's method. In 55 cases I have had no relapses. I have always dissected off the round ligament from the sac, and sutured the canal in three layers with kangaroo tendon, the entire operation being conducted in exactly the same way as in the male, excepting the transplantation of the cord. The round ligament is allowed to drop back beneath the lowermost layer of sutures.

Femoral hernia.—Most surgeons have looked upon femoral hernia as less amenable to operative treatment than inguinal. It is of interest to note that six of the 25 cases of femoral hernia were under ten years of age. This form of hernia is very rare in childhood. The methods employed in femoral hernia were two. The first consisting of a high ligation of the sac and closure of the femoral canal by means of a purse-string suture of kangaroo tendon. The second method was Bassini's, which is in brief suture of the canal by two rows of interrupted sutures. This latter method I have employed in ten cases. As the results have been, thus far, perfect from both methods, I hardly know which to prefer. Both are very easy and both make a perfect closure of the femoral canal. I think the older operation of simply ligating the sac, making no attempt to close the femoral opening, should be abandoned. Relapse after this method is common.

Technique of Bassini's operation.—The technique of the operation is now so well understood that it is unnecessary for me to go over the several steps. There are a few points, however, to which I would like to call especial attention, as I believe them to be of importance :—First, the substitution of kangaroo tendon for silk (used by Bassini), which I have adopted for all buried sutures, I consider a distinct advantage. A year or more ago I published 16 cases in which I had observed very

slow healing and troublesome sinuses, due to non-absorbable sutures, silk, silkworm-gut, and silver wire. Since then I have seen four others. Many of these sinuses developed upwards of a year after the operation and in wounds that had healed by primary union. More than this, the long-continued suppuration so weakened the canal that relapse occurred in nearly all of the cases. These cases, I think, furnish sufficient reason for abandoning all non-absorbable sutures. In most cases an extra suture should be placed above the cord, the cord passing between the two upper sutures. The operation is often imperfectly done owing to neglect on the part of the surgeon to dissect back the aponeurosis of the external oblique sufficiently, especially on the inner side. I always use interrupted sutures for the deeper layer, and unite the aponeurosis with a continuous suture of kangaroo tendon. The skin is closed with fine catgut that is found absorbed by the first dressing, which is usually made at the end of a week or ten days. Iodoform gauze and moist bichloride gauze held in place by a firmly applied spica bandage has been the dressing uniformly applied in all of my cases. In children this dressing has been reinforced by a plaster-of-Paris spica extending from the ribs to the knee. The patients are kept in bed for two to two-and-a-half weeks, and allowed to leave the hospital at the end of two-and-a-half to three weeks. In but two or three instances has a truss been advised after operation, the patient having no support of any kind.

Choice of operation in inguinal hernia.—Inasmuch as nearly all of my cases were operated upon by Bassini's method (with the substitution of kangaroo tendon for silk in the buried sutures), I cannot speak from personal experience of other methods; yet I believe Bassini's method, from a practical as well as a theoretical standpoint, superior to all other methods, and this view is confirmed by a comparison of the results of the several operations.—*Annals of Surgery, March*, 1897.

84.—TREATMENT OF INTUSSUSCEPTION BY ABDOMINAL SECTION.

By D'Arcy Power, M.A., M.B. Oxon., F.R.C.S.,
Surgeon to the Victoria Hospital for Children.

[The following is taken from Mr. Power's Hunterian Lectures:]

When irrigation has failed to relieve an intussusception, the method must not be continued for too long a time, because the patient may become collapsed, even though no injury be done to the bowel. Abdominal section must then be performed

at once, and this forms the second great method of treating intussusception. The failure of irrigation, because it leads to the necessity for laparotomy, increases the surgical interest of the case tenfold, but unfortunately it adds greatly to its gravity; for whilst the mortality of intussusception in infants treated without operation is calculated in the latest series of tables at 59 per cent., the mortality amongst the cases in which the abdomen had been opened is 67·2 per cent. Irrigation fails to relieve the invagination in some simple cases, even when no adhesions are present; in others, slight adhesions at the neck of a simple invagination prevent its reduction, whilst it may be that the case is so complicated as to need the whole of his ingenuity, first to find an appropriate method of treatment, and afterwards to carry it on to a successful issue. Shock is the great and immediate cause of danger in every case of abdominal section performed upon a young child for the relief of an intussusception, whether the invagination be simple or complex. Chilling of the body, bleeding and powerful nerve stimuli ascending to the spinal cord from the splanchnic region, are the causes of shock, and they should be reduced to a minimum. Chilling of the body is easily prevented by placing the patient upon a hot-water bed, and by swathing his arms and legs in cotton-wool, whilst the chest is covered with a roughly-made jacket of Gamgee tissue. The subcutaneous injection of one-fiftieth of a grain of strychnine, with enemata of brandy and hot water, will cause a temporary rally lasting long enough for a simple abdominal section to replace a piece of invaginated intestine in a child, though in a long operation these measures must be repeated more than once. The anæsthetic should be given sparingly. The incision should be made in the middle line, and at first it should only be long enough to admit two fingers and a thumb into the peritoneal cavity, for in the simplest cases it is unnecessary to drag the intestine to the wound. The less the intestine is handled, therefore, the better it will be for the patient, and an intussusception can often be reduced by squeezing it gently from below upwards. But it is much better to enlarge the incision and to bring the tumour into view if there is any difficulty in reducing the intussusception rather than to run any risk of tearing the serous coat by manipulating the intestine in too cramped a space. All goes well in the simplest cases, that is to say, in those which have been seen sufficiently early and in which the invagination, though too tight to be reduced by irrigation, is still easily reduced by a minimum of manipulation. In these cases it is only necessary to replace the invaginated intestine and to suture the abdominal wound to ensure the recovery of the patient.

Rapidity, combined with caution, is the golden rule in all cases of abdominal surgery, and if it be followed in these cases the operation of laparotomy, even in a young child, is no more dangerous than is the ordinary operation for the relief of a strangulated hernia in an adult.

Great care must be taken, even in the simplest cases, to prevent any cracking of the serous coat of the bowel during the reduction of an intussusception. This injury is always repaired by plastic inflammation, which is too often the starting point of a diffuse suppurative peritonitis, or if this danger be escaped it leads to the formation of adhesions which unite one coil of gut to another. A certain amount of danger, too, attends the last part of the reduction of an intussusception lest too great or too injudicious an exercise of force should tear the bowel at the neck of the tumour, where the tissues have become softened by inflammatory changes, for such an occurrence may require the instant performance of some form of enterectomy. Washing out the peritoneal cavity is wholly unnecessary in the simpler cases; it lengthens the operation and increases the shock without yielding any adequate result. Even when a simple intussusception has been cured and the surgeon has satisfied himself that he has done all that it is possible for him to do, a final difficulty may arise in replacing the inflated intestines within the peritoneal cavity. This difficulty is very commonly met with in children, and it may require that the originally small incision in the abdominal wall should be greatly enlarged, for less harm will be done by squeezing the distended intestines through a large hole than through a small one. The intestines sometimes have to be punctured in several places before they can be replaced, but I am always a little doubtful of the wisdom of such a proceeding, for the distension is great, the holes are small, and the kinks are numerous, so that it is not possible to produce any very great reduction by this method; besides, the gas is produced within the intestine, and is formed very rapidly. Additional care must be taken in suturing the wound when the intestines are much distended, for it is quite easy to kill the patient by passing one of the sutures through the distended gut, an accident which is especially likely to happen in closing the angles of the abdominal wound.

An intussusception sometimes recurs after it has been reduced, but recurrence is less usual after an abdominal section has been done than when reduction has been brought about by irrigation. In a few cases the intestine has remained so œdematous that the tumour has been felt even after the wound has been closed, leading the operator to suppose that invagination has recurred. Such a condition may be distinguished from true recurrence by the fact that the swelling rapidly disappears, and with it the

symptoms of obstruction. This is a rare accident, but Mr. Pearce Gould met with a rarer one when he had to perform a laparotomy twice at an interval of three months for the reduction of two separate intussusceptions in the same patient. There is another condition which is equally uncommon in which, after an abdominal section has been done and the intussusception has been reduced, the patient passes one or two healthy motions and seems to be on the highway to recovery, but within a few hours or a few days he again becomes constipated, his belly becomes distended with flatus, and he dies. A case of this kind recently came under my care. Irrigation failed to reduce the intussusception, so I opened the abdomen and easily replaced the bowel without doing it any injury. If a similar case should unfortunately happen again in my practice, I shall inject hypodermically a grain or two of barium chloride in solution, as the bowel in these cases is paralysed at the seat of invagination. The drug is a powerful stimulant of peristalsis, but its action is less severe than eserin. Either drug should be serviceable, for it is only in rare and advanced cases of intussusception that both the circular and longitudinal layers of muscle are involved; in the early stages one layer is injured more seriously than the other, and the circular layer more often than the longitudinal. When an intussusception has been successfully reduced after laparotomy the surgeon should satisfy himself before he closes the abdomen that he has overcome the only cause of obstruction, and that the case he is treating is really as simple as it appears to be, for an intussusception may be complicated by a variety of troublesome and dangerous conditions. Dr. Handfield Jones and Mr. Page published the details of such a complicated case in which there were two intussusceptions of the colon and one of the ordinary ileo-colic type in a boy aged five years, and I have already mentioned the less uncommon cases of double intussusceptions. Double intussusceptions usually run in opposite directions, and are separated by an interval of healthy intestine, but occasionally they may overlap each other so that the retrograde invagination, which is generally the distal one, has to be reduced before the upper one can be released.

Another complicated case, coming under the care of Dr. Whipham and Mr. Turner, occurred in a woman aged 29, in whom an intussusception, associated with a polypus, was complicated with a volvulus at two different parts of the intestine. In yet another case—occurring in a girl of six months old—recorded by Mr. Clinton Dent, a double intussusception, ileo-colic as well as ileo-cæcal, was still further complicated by an internal hernia which was apparently secondary.—*British Medical Journal, February* 20, 1897.

85.—SURGICAL TREATMENT OF GALL-STONES.

By A. W. Mayo Robson, F.R.C.S.,
Senior Surgeon to the Leeds Infirmary, &c.

[The following is taken from Mr. Robson's Hunterian Lectures on "Diseases of the Gall-Bladder and Bile Ducts":]

Cholecystotomy is unquestionably the operation *par excellence* in the treatment of gall-stones. The indications for the operation are:—(1) In all cases where the gall-bladder is sufficiently large to permit of drainage after gall-stones have been removed from the gall-bladder or ducts. (2) In cases where there are gall-stones in the ducts but the patient is too ill to bear a prolonged operation, the gall-stones being deliberately left for treatment by some solvent solution. (3) In empyema of the gall-bladder, where that viscus is not too much disorganised to be permitted to remain. (4) In certain cases of chronic catarrh of the gall-bladder or bile ducts. (5) In suppurative cholangitis. (6) In obstruction of the ducts due to hydatid disease. (7) In dropsy of the gall-bladder. (8) In idiopathic rupture, or laceration, or gunshot injury of the gall-bladder or ducts. (9) In cases of choledochotomy in order to avoid tension in the sutured duct. (10) In certain cases of obstructive jaundice dependent on malignant tumour, which is occluding the ducts; but in these cases the increased danger must be borne in mind. (11) In some cases of phlegmonous cholecystitis or gangrene, when the patient is too ill to bear cholecystectomy.

Technique.—If the gall-bladder be found distended it is aspirated and then opened, the parts being isolated by thin flat sponges. If, as is often the case, the gall-bladder be small and atrophied, it will probably be surrounded by adhesions, which require careful separation. If the operation has been undertaken for gall-stones they are removed by means of forceps passed through the opening in the gall-bladder, or better still by the scoop; if large they may be directly needled or crushed before removal.

Supposing the bile passages to have been cleared, or for some reason further manipulations are considered inadvisable; a non-perforated rubber drainage tube is inserted into the gall-bladder, and the edges of the incision in it are brought up and sutured by fine chromic catgut, to the aponeurotic layer of the abdominal wall, not to the skin, thus avoiding the danger of fistula. Where there is time I prefer to suture the peritoneum of the gall-bladder to the parietal peritoneum and the mucous margin to the aponeurosis, thus more completely shutting out the peritoneal cavity. In ordinary simple cases the drainage tube is shortened on the second and third day and removed on the

fourth or fifth, but if there have been much cholecystitis or cholangitis it is better to drain for a week, or even longer. In the case of a contracted gall-bladder situated deeply, the operation may be both prolonged and difficult. Where I have been unable to bring up the gall-bladder, I have at times succeeded in tucking down the parietal peritoneum to the edges of the gall-bladder opening, and so effecting suture of the contiguous margins; but in several cases where I could not effect this, I have with complete success utilised the right border of the omentum by suturing it to the margin of the gall-bladder opening and to the parietal peritoneum, thus forming a tube of peritoneum around the drainage tube and shutting out the general peritoneal cavity. Where occlusion in this way cannot be effected, the insertion of a drainage tube into the gall-bladder without suture of the margins to the parietes seems to be efficient. The method of packing around the tube with iodoform gauze in such cases is one in which I have great faith, as I have found it to be a safe means of occluding the peritoneal cavity. In certain cases, where the gall-bladder is contracted, after opening and clearing it and the ducts, the incision may be immediately closed by suture, the line of incision being isolated by a gauze drain; or in other cases cholecystectomy may be performed, and the cystic duct ligatured, the gauze drain being again employed; or, as suggested by Morison, the incision in the gall-bladder may be deliberately left patent, and the bile allowed to run into the right kidney pouch, from which it is removed by a drainage tube in the loin.

The so-called "ideal" operation suggested by Langenbuch, in which the opening of the gall-bladder is sutured and the viscus returned without fixing it to the surface, has a real use is found in cases where it has been necessary to open a contracted gall-bladder, but where, on account of the depth, it is found impracticable to bring it to the surface, as also when, from the contraction of its cavity, it is found impossible to insert a drainage tube.

Another modification suggested by Bloch of performing the operation in two stages is only available for the simplest cases —namely, where the gall-bladder is distended, as it does away with all chance of exploring the ducts by the hand within the abdomen, and as it is frequently followed by fistula, I would only mention it to condemn it as clumsy and uncertain, and no safer than the ordinary operation of cholecystotomy. I think, however, this operation presents considerable advantages when undertaken in the presence of chronic jaundice associated with distended gall-bladder, as in such cases there is usually malignant disease either of the head of the pancreas or of the

bile ducts, and when the peritoneum is exposed but not opened pressure can be applied to arrest the oozing of blood, which cannot always be stopped by ligatures or forceps.—*British Medical Journal, March* 27, 1897.

ORGANS OF URINE AND GENERATION.

86.—TUMOURS OF THE MALE BREAST.

By Nathan Jacobson, M.D., of Syracuse, N.Y. ; Professor of Clinical Surgery, Syracuse University ; &c.

[The following is taken from Dr. N. Jacobson's paper. The details of the cases, &c., have been omitted here :]

The subject of tumours of the male breast is of interest because of its rare occurrence. It is generally conceded by surgical writers that the forms of breast tumour met with in women are also to be found in the male breast. Although the literature is not voluminous, both innocent and malignant tumours of all types have been described in this connection. It appears, from primary growths that the female breast is subject to tumour visitation one hundred times oftener than is the male. The breast gland in the male is smaller than in the female, and, being rudimentary, tumours involving it should be discovered at an earlier period. Being earlier discovered, radical measures can be applied sooner, and there should be a more hopeful outlook for them than is the case in the female.

Wagstaff, studying the question of the time of life at which cancer appears in the breast of the male, reports, in vol. xxvii. of the *Pathological Society's Transactions*, 61 cases, in 40 of them the age being mentioned. Six were under the age of forty, 20 between forty and sixty years, 7 between sixty and seventy years, and 7 over seventy years. Other tumours have been found at a much earlier period in life. It has been my fortune to encounter neoplasms in the male breast three times. A study of these cases may be of interest. The first case occurred in a patient aged 70, and was an example of epithelioma commencing in the nipple. The second case was that of a man aged 73 ; my impression at the time of operating on this patient was that we had to deal with a scirrhous of the breast, as the growth presented the ordinary clinical manifestations. I was particularly led to make this diagnosis because of the presence of secondary glandular tumours in the axilla, but the pathologist of the hospital reported that it was a large spindle-celled

sarcoma. The slow course of the case, with death four years after operation, it seems to me, furthermore confirms this view. The third case, in a man at 52, was an example of fibro-adenoma, removed three months ago. It will be observed that both of the cases of malignant tumour which I here report, occurred after the seventieth year of life. In neither was the course rapid, nor did the advanced age of the individual seem to render the disease more malignant. I have found the record of a number of cases, in which true epithelioma has destroyed the nipple and breast of the male, and has been followed by cancerous invasion of the axilla, and in consequence of which the individuals have died of cancerous cachexia. Sarcoma of the breast seems to occur about one-fifth as frequently as cancer. While the latter attacks the male breast once where it does the female one hundred times, sarcoma in the male seems to occur about one-third as frequently as in the female.

I cannot but feel that, had I been allowed in my second case to remove the secondary growth one year after the primary operation, in view of the slow progress made by the disease after this period, we might still have had a successful termination to our operative work, despite the advanced age of the patient. Fibro-adenoma appears to be the most rare condition encountered. While tumours of the male breast, as is apparent, present no unusual features except as to their rarity, I have felt it wise to add these cases to the rather small list in our surgical literature.—*Medical News*, *January* 30, 1897.

87.—DIAGNOSIS AND TREATMENT OF SURGICAL AFFECTIONS OF THE KIDNEYS.

By J. William White, M.D., and Alfred C. Wood, M.D.

[The illustrative cases and other parts of the paper have been omitted.]

Despite the number of operations upon the kidney recorded within the past fifteen years, there is still manifest an undue conservatism in dealing with renal surgical conditions. An obstacle to the more rapid advancement of renal surgery is the difficulty in arriving at a positive diagnosis. The same difficulty may attend the detection of a small circumscribed abscess. The occurrence of abscess in connection with spinal caries sometimes gives rise to renal symptoms. A subphrenic abscess or an appendicular abscess may, in some cases, become perirenal by extension, and the condition then simulates a renal affection. Hydro- and pyonephrosis and tumours of the kidney may be

confounded with such diffuse suppuration. The distinct mass, as distinguished from a diffuse swelling, which can usually be felt in the region of one of the kidneys, together with the other symptoms and the history, will usually lead the examiner to locate the disease, at least, if not to the determination of its exact nature.

The diagnosis of the common renal affections is to be made upon a careful study of the history, attention to all the symptoms, and frequently-repeated examinations of the urine. Stone in the kidney, if smooth and embedded in the parenchyma, may give rise to no inconvenience whatever. The autopsy has, in a number of instances, given the first intimation of the existence of a renal calculus. Usually, however, the patient will have some of the following symptoms :—Lumbar pain, fixed or radiating towards the genitalia or the upper portion of the thigh of the affected side, irritability of the bladder, gravel, hæmaturia, acid pyuria, and renal colic. Any of these may be constant, paroxysmal, or induced by active exercise. According to Franks, the only symptoms that have been present in all cases are pain radiating from the region of the kidney and tenderness on pressure over the affected organ. Ransohoff lays particular stress on the presence of red blood-corpuscles at every examination of the urine. He records three cases of nephrolithiasis in which the urine was repeatedly examined over periods of from one to six months, and in every instance microscopic hæmaturia existed. Acid pyuria was also constant in all three cases. Palpation is at best of but occasional value. Morris recommends, in case no concretion is detected by thorough palpation of the surface of the organ and its pelvis, that a longitudinal incision be made on the convex border of the kidney in order to permit the finger to be introduced into the pelvis, when each portion of the gland may be examined successively. In this way, it is thought, the smallest calculus will be discovered. At the present time the use of the Röntgen ray might prove an invaluable aid in diagnosis. Contrary to the advice of some writers we believe an operation is indicated as soon as a renal calculus is diagnosed ; the danger of a later pyelitis and pyelonephritis is thus removed. It cannot be doubted that most kidney stones cause more or less irritation, which in time would lead to permanent and progressive organic change in the organ.

The symptoms of circumscribed abscess of the kidney may be as indefinite as those of calculus, but are well illustrated by five of Morris's cases, operated upon for stone, in all of which the symptoms were found to have depended upon abscess. All of these patients had complained of localised pain, and pus and blood had been present in the urine in each. Pus is almost

invariably, perhaps always, observed early in the disease. Some degree of fever is apt to accompany abscess of the kidney. This is especially true of the acute form; but in those of slow formation there may be little or no rise of temperature.

The symptoms of hydro- and pyonephrosis most commonly observed are a constant, dull pain in the loin corresponding with the affected kidney; this may last over a long period. Sooner or later a fulness or a distinct tumour can usually be felt. In pyonephrosis the urine commonly contains pus which varies in amount; pyuria is probably always present if the secretion from the affected kidney constantly passes into the bladder. In some instances, however, the discharge is periodical on account of obstruction in the ureter from a calculus, a kink due to displacement of the kidney, or other cause. Repeated examinations will, however, render an error in this respect improbable. The presence of pus in the urine may be due to cystitis, prostatitis, urethritis, &c. Its source may be determined in most cases by the history and symptoms, and by remembering that in the case of suppuration in the kidney the urine is usually acid, while in long-standing cystitis it is alkaline. Microscopic examination may disclose the seat of disease by the presence of elements characteristic of a particular locality. Blood is also present in many cases. If the condition is secondary to calculus, crystals may be detected by microscopic examination of the sediment, although their presence does not necessarily indicate a renal concretion. Rigors are not infrequent and an irregular temperature is common. In many cases the quantity of urine passed on successive days varies very greatly. This results from occlusion of the ureter of the affected kidney by torsion, by calculus, or other factor which causes the urine to be retained within the renal pelvis. During this period the urine that is passed comes entirely from the opposite kidney, so that if this be healthy, the secretion will present no abnormal appearances. If now the tumour be examined it will be found to have enlarged, and the distress will be increased. Suddenly when the pressure becomes sufficient to overcome the torsion or other cause of obstruction the kidney empties itself with partial or total relief of pain and with diminution in the size of the tumour, and there will be a simultaneous increase in the quantity of urine passed. If this be examined it may be found to contain pus, degenerated epithelium, amorphous matter, and perhaps some blood and crystals. The introduction of the cystoscope and of catheterisation of the ureter, which in women is a comparatively simple procedure, and in men may be accomplished after some dexterity is acquired in the use of the necessary instruments, has added greatly to our diagnostic resources.

Ureteral catheterisation as an aid in determining the condition of the supposed healthy kidney in cases in which a nephrectomy is contemplated is especially valuable. In most cases in which a less radical attack is to be made the indications are not influenced particularly by the condition of the other organ, excepting so far as the risk of anæsthesia is concerned.

Finally, if doubt exists, exploratory operation should be performed. This, of itself, is nearly or quite free from danger. While it is true that in these cases operation, even for exploratory purposes, should not be the first resource, on the other hand, it should not be delayed until there are advanced destructive changes in the kidney, perirenal suppuration, and systemic intoxication. In such cases, an ideal operation is rarely possible on account of the local and general conditions of the patient, and the most that can be done, probably, is to drain abscesses. If the patient survives, a permanent renal fistula will probably remain.

There is another class of cases in which the symptoms point strongly to nephrolithiasis, and, although the kidney is thoroughly explored and no stone is found, the exploratory incision is followed by entire relief. The fact that all symptoms disappear in these cases naturally leads to the conclusion that the usual gross organic changes which we are accustomed to find associated with such symptoms have not been present; the condition probably has been nephralgia.

The prognosis after operation for the conditions under consideration depends upon the stage of the disease and in any particular operation upon the integrity of the opposite kidney. It has long been recognised that the mortality following nephrotomy is much less than that after nephrectomy. If, therefore, the disease be attacked at a time when the former operation is still appropriate, the patient's chances are very much better than if operation is delayed until the renal tissue has been entirely replaced by a suppurating cavity, and when entire removal of the kidney is demanded. If the opposite kidney is also diseased, the condition becomes a most serious one, and any operation should be undertaken after mature consideration only. Sometimes the conditions are such that there is no choice in the matter, as in anuria from calculus. According to Legueu, of sixteen cases of anuria treated by nephrotomy, ten recovered, the mortality being therefore 37 per cent., which contrasts very favourably with 71·5 per cent., the mortality after expectant treatment. These results have led Ransohoff to divide nephro-lithotomies into those of necessity and those of choice. Anuria may result from obstruction of both ureters by calculi or more usually by obstruction of one ureter and reflex arrest of function in the

other kidney. The immediate prognosis will depend largely upon the nature of the operation which the condition present demands. Simple nephrotomy for calculus or abscess is much less serious than the continued presence of the offending substance.

The mortality after nephrectomy for these conditions is variously stated at from 33 to 50 per cent., the fatal result being usually ascribed to absence or disease of the other kidney. Thornton reports forty-nine abdominal nephrectomies with but ten deaths, a mortality of about 20 per cent. These figures still further emphasise the need of early operation when nephrotomy will meet all the indications. The incision that has been employed in these cases is that usually recommended, beginning just below the last rib, close to the outer border of the erector spinæ muscle, and continued downward and forward towards the iliac crest. The incision should be made three to four inches in length, according to the thickness of the abdominal wall, and may be increased, if necessary, by prolonging the cut outward.

After nephrolithotomy on a kidney otherwise healthy, immediate suture has been carried out by Le Dentu, Morris, Israel, Fenger, Bernays, Tuffier, Garard, Marchant, Rose, and Ransohoff. In most cases, however, drainage has been used. In all of those here recorded a drainage-tube was inserted into the renal incision, and if there had been much disturbance another into the pocket below and behind the kidney, and iodoform packing loosely introduced. If there was persistent hemorrhage in the deeper portion of the wound, this was controlled by firmer packing with gauze. The wound was partly closed by sutures, including all the layers of the parietes. The tubes were removed as early as was thought safe, always within a few days, and replaced by a strip of gauze, which did not interfere with healing to the same extent as the firm tube. Excessive packing of the wound is said to have caused death in the practice of Ransohoff and Israel, the pressure of the gauze on the nerves of the mesocolon and behind the parietal peritoneum causing intestinal paralysis.—*Annals of Surgery, January*, 1897.

88.—RENAL CALCULUS.

By George E. Armstrong, M.D.,
Associate Professor of Clinical Surgery in McGill University.

[Dr. Armstrong thus discusses the diagnosis and treatment.]

The diagnosis of stone in the kidney is very difficult. Ransohoff has collected 40 cases, in all of which the symptoms

of renal calculus existed, and in which exploration of the kidney failed to find a stone. In fact, I think that there are but few surgeons who have explored any considerable number of kidneys for stone who have not occasionally failed to find one. In many of these cases, however, the symptoms have been relieved. The simple opening of the kidney capsule sometimes is followed by relief of symptoms. In some cases a small abscess has been found and emptied. Mr. Reginald Harrison has recently reported a series of cases, where incision of the kidney capsule and exploration of the pelvis has relieved a long persistent backache with pyuria. We need further light on the diagnosis of stone in the kidney. I believe it to be important to recognise the difference in symptoms between stone remaining in the kidney and recurring attacks of renal colic, due to the repeated formation of small stones which pass down into the bladder. The symptoms of the latter condition are more severe and characteristic than are those of the former. The presence of blood and pus in the urine, only after active or violent exercise or in notably increased quantities after such exercise, points strongly to the presence of stone in the kidney. This was the case with the patient from whom I removed a large stone weighing about 600 grains. It was removed from the right kidney. In the same kidney were 12 small faceted stones. The left kidney also contained five large stones and a quantity of gravel, yet the urine seldom contained pus and blood except after exercise in a gymnasium. To show you how free from pain such a patient may be, I may tell you that the patient from whom I removed the stone bicycled through England last summer for two months without suffering any inconvenience or pain, and only consulted his family physician because he noticed that his urine was always bloody after he had exercised in a gymnasium. He gave a history of having had renal colic sixteen years ago, and again fourteen and twelve years ago. At the time of operation, the only guide as to which kidney I should explore was a vague feeling of discomfort on the right side, which was present the greater part of the time. He had felt some distress occasionally on the left side, but much less than on the right. In women it is easy by means of this ureteral catheter to catheterise the ureters and thus obtain a specimen of urine from either kidney. In man up to the present we are not able to do this with any degree of facility.

A condition which closely simulates stone in the kidney is tubercular pyelitis. In the early stage either condition may cause frequency of micturition and purulent urine and hæmaturia. These symptoms occurring in a thin emaciated patient would suggest tubercular disease, occurring in an otherwise robust and healthy patient would suggest stone. Later on

tubercle bacilli might be found in the urine. In cases of doubt bacilli should be carefully looked for.

Treatment.—Bearing in mind that the kidney, although the sufferer is not the offender, and that the digestive organs are the ones at fault, to the latter we direct our attention. The diet should be such as is easily assimilated. Sugars, fats, and alcohol should be excluded. Spirits and water are less harmful than wines and beer. Nitrogenous food should be used in moderation. Do not exclude animal food altogether, with the idea that by so doing you prevent the formation of renal calculi. The frequent occurrence of renal calculi among the poor who seldom taste meat is sufficient evidence that an exclusively vegetable diet is not a preventive. The diet should be mixed, varied, and such as to promote good health and good digestion. Sir Henry Thompson advises the use of salines, especially as found in the natural mineral waters. He prescribes the Friedrichshall and Hunyadi Janos waters, given in the morning, hot, and in sufficient quantity to be gently laxative. Citrate of potash and carbonate of lithia may prove useful, as alkalies, neutralising the excessive acidity. Hot fomentations and anodynes may be required to allay pain. If the stone remains and grows and is injuring to the kidney, resort must be had to surgical measures. Nephro-lithotomy, nephrotomy or nephrectomy are the operations generally performed. Nephro-lithotomy was first performed by Mr. Henry Morris, of the Middlesex Hospital, London. Its aim is to open the kidney, remove the stone, and to leave a healthy kindney afterwards. It is an operation devoid of much danger and, as a rule, satisfactory in its results. An incision is made about four inches long, three-quarters of an inch below and parallel with the last rib. It begins just external to the erector-spinæ muscle, and is carried rapidly down through the muscular layers until the peri-renal fat is arrived at. The outer edge of the quadratus lumborum may be incised if found necessary. The fat around the kidney may be divided by tearing with two pairs of forceps, or by a pair of forceps and the finger. When the kidney is reached it should be carefully explored. First pass the finger over the posterior surface of the kidney and its pelvis. If no irregularity or hardness is felt, pass the finger along the anterior surface. Should no indication of the situation of the stone be detected by this plan, the kidney may be explored by a needle. A long hair-lip needle answers very well. With this, several punctures may be made in the kidney with safety. In doing so, however, have a method. Begin at one end of the kidney and introduce the needle at intervals along the convex border until the other extremity is reached. You may safely make eight or ten punctures in this manner, and probably one of them will strike

the stone. Failing to find a stone by puncturing with a needle, do not conclude that there is no stone. Ask your assistant to make firm pressure upon the abdominal wall, pushing the kidney up towards the wound. Then with a scalpel incise the capsule and slowly with a gentle boring motion insert your forefinger through the capsule and kidney tissue into the pelvis. Do not give up your search until you have thoroughly explored the pelvis and calyces of the kidney with your finger. It is sometimes extremely difficult to find a small stone deeply embedded in a kidney. In one instance, Mr. Henry Morris failed to find a stone after carefully exploring the kidney. The symptoms, however, continued, and Mr. Morris removed the kidney. It was laid on a table, and even then no stone could be detected. One was present, however, and was discovered when the kidney was laid open. Some operators prefer to open the pelvis of the kidney instead of the convex border. I have always opened the convex border myself. It is more accessible, the hemorrhage is not troublesome, and there is less danger of a urinary fistula remaining. When a stone is found it is seized with a pair of calculus forceps and removed, or sometimes it is more easily slipped out in advance of the finger. If the stone is a large one it may be broken and removed in segments, thus doing less damage to the kidney substance. After removal, a rubber drainage tube may be inserted through the opening in the kidney into the pelvis for drainage. It should be allowed to remain forty-eight or seventy-two hours. Iodoform gauze may be lightly packed around the kidney and the wound partially closed. The dressings should be antiseptic and frequently changed. I like to give these patients boracic acid or salol for two or three days before operation, with a view to preventing urinary fever which may occur after this operation, as well as after an operation upon the urethra or bladder.

Nephrotomy is the term employed to indicate incision into the kidney for purposes of exploration or treatment. The term nephrectomy means the removal of the kidney and nephrorrhaphy means exposure of a movable kidney through the lumbar incision and its attachment to the edges of the incision. Nephro-lithotomy is the ideal operation for renal calculus.—*Montreal Medical Journal, January*, 1897.

89.—STONE IN THE BLADDER.

By Brigade Surgeon Lieutenant-Colonel Keegan.

In recent years the trend of surgical opinion in India has been in the direction of restricting supra-pubic lithotomy to very narrow limits. Expert litholapaxists in India nowadays attack

a stone weighing between two and four ounces with the utmost confidence, and are therefore seldom obliged to fall back upon supra-pubic lithotomy, and when they do meet with a stone which defies the power of a No. 16 or a No. 18 lithotrite they are more inclined to perform a lateral lithotomy or a perineal lithotrity than a supra-cubic lithotomy. I feel certain that in India perineal lithotrity will, within the next decade, occupy the place now held by lateral lithotomy in dealing with very large or hard calculi in adult males which resist the power of the largest lithotrites which can be safely introduced into the bladder per urethram. And should this opinion prove true the death-rate of a very important class of cases will be greatly diminished. The success achieved by Mr. Reginald Harrison, and more recently by Mr. Herbert Milton, in perineal lithotrity will, no doubt, stimulate surgeons in India to adopt this method in preference to lateral lithotomy. We know how the death-rate following lateral lithotomy increases in direct ratio with the size of the stone to be removed, and that this is especially true when we have to deal with patients at the middle period of life. This mortality is in a great measure due to the large incision made in the prostate, which sometimes unfortunately encroaches on the capsule of the gland, and to the almost inevitable bruising of the neck of the bladder and of the tissues of the perineum in the extraction of a large, unbroken calculus by this route. It was with the intention of counteracting these risks that supra-pubic lithotomy was revived ; but experience has taught us that supra-pubic lithotomy is not more successful than lateral lithotomy is in dealing with very large calculi, and, therefore, I think that perineal lithotrity should get a fair and extended trial in these very difficult cases.

As years go by supra-pubic lithotomy will be less and less employed in India, and will be reserved for those comparatively rare cases to which it is so eminently adapted. The heavy mortality which followed 147 supra-pubic lithotomies may come as a surprise to those who have long laboured under the impression that the natives of India bear all operations for stone in the bladder with a truly wonderful immunity from fatal results. The general surgeon in Europe, who through lack of opportunities can hardly be expected to be very proficient in the use of the lithotrite, marvels at the great success which the skilled litholapaxist in India achieves in dealing with large stones in young and old patients ; and, naturally enough, he is inclined to ascribe the great success of his Indian *confrère* in the treatment of stone in the bladder to the greater tolerance of operative interference on the part of the native of India as compared with the native of Europe. The main reason why litholapaxy is more successful in India than in Europe is that, as a general rule, it is done

more thoroughly and more skilfully in the former than in the latter. And the reason why it is done more skilfully in India than in Europe is explained by the frequently repeated opportunities which surgeons in India enjoy of practising this operation. In few operations in the whole range of surgery are constant practice and the personal factor of the operator of greater importance than in litholapaxy. No surgeon need hope to acquire a practical familiarity with the lithotrite until he has performed between fifty and a hundred litholapaxies, and even then, he has still much to learn.—From Brigade Surgeon Keegan's paper in *The Lancet*, *January* 20, 1897.

90.—TREATMENT OF GONORRHŒA.

Dr. Ramon Guiteras (*Medicine*, April, 1896) says that the treatment of gonorrhœa in man depends on certain conditions :—(1) The stage of inflammation in which the patient presents himself, (2) the presence or absence of posterior urethritis, (3) the presence or absence of strictures. If the patient is seen in the first stage of a very acute attack, with abundant discharge and great congestion of the parts, accompanied by painful micturition, the author delays active treatment for a while. He gives diluents containing 5 grs. each of the citrate and bicarbonate of potassium and cubebs in teaspoonful doses every three hours. The bowels are kept open with Rochelle salts and two hot sitz baths daily prescribed. He regulates the diet, cutting off stimulants, tobacco, pepper, and asparagus, and orders a supensory bandage to be worn. Usually in three days the congestion is sufficiently reduced to allow astringent injections or hot irrigations to be commenced. Most cases do not have the very acute symptoms referred to, and then injections or irrigations may be commenced at once. If the patient can come often enough he starts with mild irrigations given once a day, and slightly astringent hand injections to be used as well. If the patient is in hospital two irrigations a day are used, and the hand injections omitted. The hand injections should be of the blandest type—zinc, alum, or lead compounds dissolved in rose-water. The irrigations should be of potassium permanganate, or silver nitrate ; perchloride of mercury is sometimes used, but seems more irritating than the other two. If permanganate is used, Dr. Guiteras starts with a 1 : 5000 solution, and increases to 1 : 2000 ; with silver nitrate he employs solutions running from 1 : 8000 to 1 : 2000. He finds some patients improve more rapidly under silver irrigations than under permanganate, and he has reversed his former plan, now using silver first and permanganate only for cases which do

not improve under silver. The method of irrigating is as follow :—The patient, having passed his water, lies on his back, with the shoulders elevated; the douche jar is raised to a height of two feet, and a tube of glass, or soft rubber, introduced into the urethra as far as the bulb; the fluid is then allowed to escape into the urethra and pass out along the side of the tube ; the irrigating fluids should be used as hot as they can be borne. If posterior urethritis develops during treatment, or the patient at first appears to be suffering from an antero-posterior inflammation, the author does not give hand injections, but modifies his method of irrigating by raising the height of the douche jar and allowing the fluid to enter the bladder. He also gives 10 drops of tincture of belladonna three times a day to overcome the tenesmus, and sandalwood oil to modify the urine passing through the canal, beginning with 15 drops of oil three times a day, and increasing 5 drops a day as long as it is well borne. If sandalwood oil does not agree, he tries cubebs or copaiba, but thinks sandalwood oil preferable, as not irritating the digestive and genito-urinary tracts as much as the others. If irrigations do not seem to benefit the posterior urethritis, he gives posterior instillations of nitrate of silver every other day by means of the Ultzmann syringe, beginning with a one grain to the ounce solution, and increasing it gradually in strength.

In very acute cases of posterior urethritis, with frequent calls to urinate and much tenesmus, he prescribes complete rest, accompanied by hot sitz baths, rectal enemata of hot water, suppositories of belladonna extract and morphine, Rochelle salts in the morning, and a milk and Vichy diet for a few days. In chronic urethritis or gleet, Dr. Guiteras examines for stricture with bulbous sound and endoscope. If new yielding strictures exist, he dilates them by means of the Oberlander dilator in easy stages. After the urethra has a smooth bore, if the gleety discharge continues, the endoscope will usually reveal some localised areas of congestion or inflammation, best treated by applications of silver nitrate from 1 to 20 grains to the ounce.

Hotaling (*Medical News*, November 7, 1896) has had most satisfaction in treating gonorrhœa by the use of permanganate of zinc. He claims to have obtained a permanent cure in 50 out of 58 cases treated by this drug. He finds it equally successful in both acute and chronic cases. One remarkable characteristic is the almost total absence of irritation, the patient seldom complaining of pain. Its effect is discernible almost immediately, the discharge being usually greatly reduced after a few injections. The method of treatment is simple. After the stage of acute inflammation has subsided injections are made four or five times a day after urination, with an ordinary blunt-pointed hard rubber syringe with a capacity

of 3 to 4 drachms. Dr. Hotaling begins with a solution of half a grain to the ounce of water, gradually increasing to three times that strength. Cure was pronounced permanent in an average of twenty days after beginning treatment.

A good many observers have reported cases of gonorrhœa treated with argonin (see *Retrospect*, vol. cxii, p. 4).

Swinburne has used argonin in some 50 cases of acute gonorrhœa coming under observation in the early stages of a first attack, and in about a dosen chronic cases which had proved rebellious to other modes of treatment. He thinks the length of time the cases have been under observation too short to form an intelligent judgment as to the ultimate value of the substance. He was only able to use the drug in urethral injections, as irrigations would take too much of it, and only one injection was made each day. No internal medication was given except for the regulation of the bowels. Alcoholic beverages were forbidden, but no special restriction of the diet was enforced, and smoking was not prohibited. In all cases a rapid diminution in the discharge was noticed while they were under treatment, and usually a rapid diminution in the number of gonococci. Several of the cases suffered from persistent headache, requiring medicinal treatment; and in one case it seemed to be definitely associated with the argonin treatment. Dr. Swinburne also found the constipation very persistent and more difficult to overcome than is usually the case. He gives details of his cases, and sums up his impressions as to the value of the drug thus:—"Its use is absolutely harmless, it shows marked power in causing the disappearance of the gonococcus, it has a peculiar power in allaying the inflammation of the disease, and I am strongly impressed by the degree of comfort that the patients possess even in the most acute stage. The only observation which I have not yet been able to make, on account of the shortness of time the drug has been in use, is the liability of these cases to relapse, and of this a further study must be made."

Gutheil (*Deut. med. Woch.*, No. 35, 1896) has treated 70 cases of gonorrhœa with argonin, the presence of the gonococci having been established in every case. He finds it best to use a fresh preparation (one-half per cent.) and keep it in a dark bottle. After eight or nine days' treatment the gonococci could no longer be found in the discharges, but after the argonin, stringents such as ichthyol had to be used for 21 days before the gonorrhœa was completely cured. The author concludes that this method is a great advance in the treatment of gonorrhœa, as it precludes the supervention of any complications, only one of the 70 cases manifesting any signs of epididymitis.—Taken from Mr. Coutt's abstract in the *Medical Chronicle, January*, 1897.

91.—TERTIARY SYPHILITIC EPIDIDYMITIS.

By Charles G. Cumston, M.D., of Boston,
Assistant Professor of Surgical Pathology, Tufts College.

[The case and other parts of Dr. Cumston's paper have been omitted here.]

For a long time tuberculosis and gonorrhœa were the only diseases that were supposed to attack the epididymis, but of late years a certain number of syphilitic manifestations have been proven to occur in this organ. We may say that the beginning is generally subacute. The induration is irregular, and often the entire epididymis is invaded, although without adhesions to the testicle. There is a tendency to sclerosis or to the formation of gummata. These are the symptoms that I think we may attribute to tertiary syphilitic epididymitis. Regarding the differential diagnosis, tertiary epididymitis will certainly present much difficulty, and it is certainly important, on account of the prognosis and for the treatment, to arrive at a definite conclusion regarding the nature of the affection. In the first place, secondary epididymitis is in some ways similar to the tertiary form ; the tumour is distinctly isolated from the testicle, the pains are subacute on pressure, and its consistency is firm, and the tumour is lumpy. In secondary epididymitis the lesion is limited to the caput of the organ, while in the tertiary type the lesions are diffused. On the other hand, when we are dealing with a secondary epididymitis, both organs are often the seat of the trouble. In one of the forms of the disease, the commencement is often insidious, while the other is accompanied by acute and painful symptoms. The tertiary syphiloma does not have the induration similar to a pea or pill, and as if set into the caput of the epididymis, which is characteristic in the secondary variety. On the contrary, the indurated nodes are often multiple, much larger than in the secondary form and the entire epididymis or, at least, the two neighbouring segments of the organ are involved. In the therapeutical point of view, there seems also to be a difference between these two types, and, according to Dron, the secondary resists for a long time specific treatment, and especially iodide of potassium, especially when the latter is given alone ; and Mauriac is also of this opinion.

In gonorrhœal epididymitis, the beginning is subacute, and the division of the lesions characteristic of the tertiary manifestation may sometimes be taken for an epididymitis due to the gonococcus, but the intensity of the pain, the fever, the external signs of inflammation, induration of the epididymis, which is firmly bound to the testicle, the frequency of inflammation of the vaginal membrane, and especially the presence of a discharge

from the urethra, will assure the diagnosis in the majority of cases. But, if we are dealing with one of the acute and subacute forms described by Angagneur and mentioned by Delahaye, if the discharge is slight or has disappeared for some time, the problem is far more delicate. And, nevertheless, in cases of latent and chronic gonorrhœa, the induration becomes localised in the tail of the epididymis, and careful palpation will show the presence of adhesions with the testicle, while in tertiary epididymitis the testicle and epididymis are distinctly isolated one from the other. And, lastly, the antecedents of the patient and the history of a former primary sclerosis, the presence of other tertiary symptoms, as well as the result of treatment, will confirm the diagnosis.

Tubercular epididymitis may have an acute or chronic course, and, as in the disease under consideration, the softened contents of the foci break down and are evacuated through the skin of the scrotum, leaving behind one or several fistulæ. If we are dealing with a case in which the scrotum is healthy, the indurations of a tubercular epididymitis are less well marked and less distinct than in tertiary syphilis. These bosses are often very large, of unequal consistency, and less rounded. Frequently the testicle and the cord are often the seat of disease, and the prostate and the seminal vesicles may also be involved in a tubercular process before the epididymis is attacked. Rectal examination is consequently decidedly indicated, in order to make a diagnosis, and often the examination of the lungs will reveal symptoms of pulmonary tuberculosis. If all these signs are wanting, the only thing that remains for us to try is the antisyphilitic treatment ; iodide of potassium and mercury will never have any action on tuberculosis, while the contrary is true for tertiary lesions. If we are dealing with a case presenting a fistula, which is present at the lower or posterior aspect of the scrotum, with an indurated epididymis adherent to the neighbouring parts, the diagnostic means before mentioned are still useful in these cases. On the other hand, the depression of the external orifice of the fistula. the characters of pus containing cheesy matter, and, lastly, bacteriological and microscopical examination of the matter discharged will be sufficient to indicate the tubercular nature of the affection. It is extremely infrequent that a malignant growth begins in the epididymis, and in the large majority of cases the testicle is the first diseased.

Regarding cysts of the epididymis, we know that they are often met with on the convex aspect and on the free end of the caput of the epididymis, and occasionally near the tail of the organ. In the beginning, when the cyst is only the size of a bean, its consistency may appear hard, and transparency and

fluctuation will not as yet appear. Its indolence and localisation will, however, allow us to make out its nature. Later on, when it is larger, it will be no longer hard to the feel, and in many cases fluctuation will be made out, but we must always remember the possible presence of a gumma undergoing softening, and specific treatment should be tried. Puncture may, perhaps, be recommended, but it is not perfectly legitimate, excepting when the treatment and the absence of tertiary symptoms will have allowed us to eliminate the possibility of the lesion being of a syphilitic nature. These considerations are also applicable to spermatocele. The prognosis is excellent in the disease under consideration, and all trace, with the exception of a slight induration, will disappear after a certain time, when proper therapeutic measures have been employed and for a sufficiently long time.—*Annals of Surgery, March*, 1897.

AFFECTIONS OF THE EYE AND EAR.

92.—EXAMINATION OF THE EYE.

By Gustavus Hartridge, F.R.C.S., Senior Surgeon to the Royal Westminster Ophthalmic Hospital, &c.

[The following is taken from Mr. Hartridge's first article:]

To commence with the eyelids, we have to note their position and mobility, the breadth and shape of the palpebral fissure, special attention being paid to the edges of the lids where thickening, redness, and other pathological changes are liable to take place. The position of the ciliæ must be examined; some of them may be irregular, stunted, or misplaced, rubbing against the sensitive surface of the cornea, causing constant irritation and annoyance, as well as opacity and impaired vision. Should an ulcer of the lid be present the condition of the pre-auricular gland must be ascertained. The position of the puncta should be noticed, as well as the condition of the lachrymal sac; slight pressure may be exerted over it by the finger to ascertain if any regurgitation take place. Should doubt exist as to the patency of the canaliculi or nasal duct, a drop of a solution of fluorescïn —(Fluorescïn, grs. x., Sodii biboratis, grs. xx., Aquæ destillatæ, ℥i.)—may be placed between the lids at the inner canthus. If the canals are normal this staining solution will soon find its way into the nose, and becomes evident on the patient using his handkerchief. The ocular and palpebral conjunctiva, including the cul-de-sacs, the caruncle, and the plica semilunaris, are all reviewed. The conjunctiva covering the lower lid and forming

the lower cul-de-sac is easily exposed by requesting the patient to look up, while the observer draws down the lid gently with slight backward pressure, when eversion will take place. Eversion of the upper lid is slightly more difficult; the patient should hold his head still and look down; the lashes are taken hold of by the finger and thumb of the surgeon's right hand and drawn gently down, while the thumb or index finger of the left hand is placed against the lid just above the tarsus and pressed slightly downwards as the lashes are lifted upward over the thumb as a fulcrum, or a probe may be used over which to evert the lid instead of the thumb. Foreign bodies are frequently to be found under the upper lid; the conjunctival surface may have a number of granulations upon it, or scars may be present as permanent evidence of previous trachoma. The cornea is slightly oval in shape; being the segment of an ellipse with its shorter diameter vertical, we have to consider its size, curvature, polish, and sensitiveness. When the patient looks to the window while we stand in front of him, we can see reflected on the cornea a small image of the window; if the patient move his eye in different directions we shall be able to watch any distortion of this image which may indicate some irregularity or loss of transparency. The cornea may be further examined by focal illumination; this is carried out by means of a convex lens of about 13 D., held in front of the eye in such a manner that the light from the window is focussed upon the cornea. This will enable us to detect irregularities or opacities. The focal illumination may often be supplemented with advantage by a high magnifying glass, an achromatic combination of flint and crown glass. The cornea, while retaining its transparency, is sometimes conical in shape; this can be best detected by looking at it from one side when the conicity is seen in profile. The sensibility of the cornea is ascertained by touching it lightly with a small piece of blotting paper; if normal the patient will feel the slightest touch, and blink.

Where much photophobia and lachrymation is present some difficulty may be encountered in making a satisfactory examination of the cornea. The eye should then be thoroughly cocainised with a 4 per cent. solution, and the greatest care taken to use no force, which might cause, in the case of a deep ulcer, the rupture of its thin floor and other serious damage; this is especially so in young children, where the least attempt to open the lids often sets up the most violent blepharospasm. Here it may be wise to give a general anæsthetic, so that a complete examination of the eye may be made at the first visit. When no ulceration of the cornea is feared the child may be placed on its back on the nurse's lap, who should hold the child's two hands, while the surgeon, sitting opposite, grasps

the child's head between his knees (protected by a towel). In this way complete control is obtained, and the lids may be separated by gentle and firm pressure with the tips of the fingers, or retractors may be used instead of the fingers. When the eyeball is congested it is important to distinguish whether it is conjunctival or ciliary in character; conjunctival redness consists of fulness of the posterior conjunctival vessels, and may be recognised by their bright red colour; by the tortuosity of the vessels; by the mobility of the vessels, which can be made to slide over the sclerotic by the finger. The injection is greatest in the cul-de-sacs, and decreases from behind forwards; besides this there is increase in the mucoid secretion, with flakes of pus and sticking together of the lids in the morning. Ciliary injection is characterised by the bluish pink appearance surrounding the edge of the cornea; by the straight course of the vessels radiating from the cornea, which cannot be made to move under the finger, since they are in the sclerotic. Pressure by the finger through the lid empties the vessels, which do not again fill till the finger is removed. Of course many cases exist in which both conjunctival and ciliary injection are present at the same time. The anterior chamber should be quite transparent, but the chamber may contain exudation, blood or pus, which will tend to sink to the lowest part. When the chamber is very shallow glaucoma may be suspected. When it is unusually deep the iris may be retracted, or the cornea bulging. The iris should be bright-looking, showing its radiations and crypts, with the ciliary and pupillary portions distinct; it should be freely movable in the aqueous, and have no adhesions to the lens behind (posterior synechiæ), or to the cornea in front (anterior synechiæ). In some cases on moving the eye the iris will appear tremulous; this would suggest that it has lost the support of the lens, either from operation, dislocation, or as a congenital defect. The pupils should be of the same size on the two sides, and should act well to light, accommodation, and convergence, as well as consensually. The lens is not visible if quite transparent. When opacities are met with, they may be of various kinds, and can best be examined by focal illumination. The observer must bear in mind that as age advances the density of the lens increases; hence, in people past middle life a certain amount of light is reflected from the lens, which gives rather the impression that there is opacity present. For the complete examination of the lens a mydriatic is necessary. Note must also be taken of the direction of the visual axes, the prominence of the globes, the voluntary movements of the eyes, and if any involuntary movements are present, such as nystagmus. The estimation of the tension of the eyes will conclude our objective examination.—*Treatment, April* 8, 1897.

93.—THE ABUSE OF "ASTRINGENTS" IN THE TREATMENT OF EYE DISEASES.

By Edgar A. Browne, of Liverpool.

If an eye is inflamed, if it is red, irritated, watery, mattering, the chances are enormously in favour of sulphate of zinc being prescribed in the form of lotion or of drops. But, curiously enough, though it is regarded as *the* remedy for an inflamed eye, it enjoys no great reputation in the treatment of other organs. The practice of using metallic salts as astringents in inflammation of the eye was probably founded on good but insufficient grounds. A careful and just observation made in a few cases has been made the basis of a sweeping generalisation. But have astringents the value popularly attributed to them? I doubt it. We possess in cocaine an astringent of extraordinary power. It anæmiates the superficial structures of the eyeball to a dangerous extent if used too freely. No metallic astringent approaches it in the rapidity or certainty of its action, but it has scarcely any curative qualities. According to the theory, it should be invaluable. If, then, the metallic astringents are superior, it is probably in virtue of some other quality than their astringency. No hesitation need be felt in saying that they act as antiseptics. Conjunctivitis of all forms, from the terrible gonorrhœal ophthalmia to the transient and harmless catarrh (so called), are due to irritation from outside causes. Inflammation arises either from the introduction of organic septic material or a poisonous irritant. Carefully sterilised copper, introduced experimentally into any tissue of the eyeball, gives rise to inflammation. On the other hand, sterilised fragments of iron (as frequently seen in forge accidents) may remain imbedded innocuously for years. The introduction of septic material is, of course, a common occurrence; inflammation from inorganic irritants is comparatively infrequent.

Inflammation can be subdued by destroying the germ (whatever the species may be) and rendering the soil sterile, or by removing simple irritants. We learn, therefore, that the treatment of conjunctivitis resolves itself into the maintenance or the restoration of asepsis. The doctrine of astringency may be regarded as fallacious and the practice futile. Conjunctivitis would present no difficulties in the way of recognition and treatment if it always occurred as a primary and uncomplicated disease. Sometimes it does. The inflammation starts in the conjunctiva, and is practically proper to the membrane. But frequently it is merely a secondary symptom of deep-seated inflammation, iritis, cyclitis, glaucoma. Here are traps for the

unwary, and occasionally pitfalls even for the most careful. The routine practitioner, of course, comes to grief with a light heart. Sometimes vigorous local treatment does positive harm; at other times it leads to disaster by postponing necessary measures. You cannot be too careful in determining whether conjunctivitis is or is not accompanied by any underlying inflammation. It is a good rule to regard conjunctivitis as being a symptom of some other disease till the contrary is proved. Except in the case of purulent ophthalmia (of which the symptoms, after the initial stage, are quite unmistakable), there is no call for vigorous treatment of any form of simple conjunctivitis for a day or so. Better wait and watch. Consider your diagnosis according to the laws laid down for you in the case of other organs, and remember that an accurate knowledge of the natural course of a disease is the best foundation for its rational treatment.

The "astringents" in general use are the sulphates of zinc, alum, and copper, the chloride of zinc, nitrate of silver, and acetate of lead. Regarding these substances not as astringents but as antiseptics, the zinc sulphate may be regarded as good general utility. It is popular, common, and cheap—all points in its favour. Against alum I have conceived a dislike—I can scarcely put my reasons in words. I have a distinct preference for the copper sulphate in the muco-purulent and purulent conjunctivitis that runs through schools, and in all early stages of trachoma. For mild cases of ophthalmia neonatorum, we have used the chloride of zinc for many years. We began to use it empirically, and not as an antiseptic. The true nature of ophthalmia neonatorum was not suspected. Though there are better, it may still be regarded as an excellent remedy, belonging to the most valuable class of chlorine compounds, whence come many of our best disinfectants. It has the disadvantage of being extremely irritating. If used at all too strong it causes the lids to swell, and gives rise to a copious discharge of mucus. This can be verified on the healthy eye.

We have already referred to the discharge of mucus as disadvantageous. It is so because it forms a habitat peculiarly suited for germ culture. An antiseptic that gives rise to mucus partially defeats its own object. It is in the removal of this favourable soil that lotions of boracic acid or borax prove useful. They act as detergents, their antiseptic power being feeble in the extreme. Nitrate of silver cannot be dispensed with in the routine treatment of severe purulent ophthalmia in the adult or the new-born—I mean in cases of recent gonorrhœal infection. The conjunctiva will stand a good deal of the nitrate, but the cornea is extremely intolerant of it. If the epithelium is abraded or ulceration occurs, it gives rise to white opacities. For reasons which cannot conveniently be detailed here, it seems

to exercise an unfavourable influence on corneal ulceration. If used, too much care cannot be exercised in applying it religiously to the whole surface of the inflamed conjunctiva. Generally it is flooded on the cornea where it is not wanted, and it never reaches the superior conjunctival cul-de-sac where it is essential.

A few words on antiseptics which have no spurious reputation as "antiseptics" to create confusion. (1) The perchloride of mercury has a good clinical and laboratory reputation. It may be used in solutions 1 to 5,000, 1 to 10,000, in all forms of ophthalmia, and as a precautionary lotion. It has the disadvantage of being irritating, and occasionally giving rise to permanent white opacities of the cornea. This is especially the case when cocaine is used, and many surgeons are aware of the drawback in cataract extractions. A better remedy is the oxycyanide of mercury, which may be used in solutions of 1 to 1,500 or 3,000. It is not kept by many chemists. I have never seen nor heard of its causing any opacification of the cornea; and it does not, if cautiously used, injure instruments. It is extremely efficacious in all muco-purulent cases. Panas' solution of the biniodide of mercury is of great utility, and seems to me to possess more rapid penetrating power than the foregoing, and therefore applicable to cases with corneal complications. It smarts a good deal, but gives rise to little permanent irritation, even if applied to ulcerated surfaces.

Antiseptic remedies may be trusted to infiltrate the cornea and pass into its substance or the interior of the eyeball, are much to be desired. The only two drugs to be at all depended on are quinine and pyoktanin. Neither can be rated high as antiseptics, but they are extremely useful in infiltrations and ulcerations of the cornea. So also may it be said of the time-honoured remedy—the yellow oxide of mercury. This is one of our most valuable applications in chronic cases, but exceedingly treacherous. Its quality varies extraordinarily. Some samples irritate to a remarkable degree. Nothing in the external appearance has come under my observation that might serve as a warning, but there are certainly subtle differences in the chemical constitution of the drug, as well as variations in the sensitiveness of the patients. With all its drawbacks, it has a wide range of utility. Remedies superior to the foregoing may be, probably will be, discovered. Even if that day arrives we shall benefit but little if an empiric and routine treatment remains the rule. The foundation of all rational treatment is twofold: (1) diagnosis, and (2) a knowledge of the pathology and natural course of the affection. It is no use trying to learn about drugs if we do not know the diseases.—From Mr. Edgar Brown's paper in the *Liverpool Medical Chirurgical Journal*, *January*, 1897.

94.—THE TREATMENT OF CONTUSIONS OF THE LIDS.

By Charles H. May, M.D.,
Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department of Columbia University, New York ; &c.

[The following is taken from Dr. May's paper :]

On account of the cellular nature of the tissue of the lids and surrounding parts, the swelling and discoloration are apt to be great and out of all proportion to the amount of force encountered in the accident. These tissues are firmly adherent to the supraorbital margin ; hence the swollen and discoloured area is usually limited by this line. Sometimes we find, after bruises or operations, that the discoloration involves the inner portion of the lids of the side not affected, creating the impression that the fellow eye has been involved to a lesser extent. This peculiarity is due to the fact that the blood has been poured into the cellular tissue surrounding one eye, and has travelled across the nose and found lodgement on the opposite side, the thickness of the skin over the bridge of the nose obscuring the route. In most cases contusions of the lids are produced by blows ; less frequently they result from other forms of violence ; sometimes they occur after operations upon the eyeball or its adnexa. It is a remarkable fact that contusions of the lids are rarely accompanied by serious injury to the eyeball, showing how well the organ of vision is protected by the bony margins of the orbit and the lids.

The complications which may occur are :— Hemorrhage affecting some part of the eyeball (1, subconjunctival ; 2, into the aqueous chamber ; 3, into the vitreous ; and 4, retinal) ; separation of the attachment of the iris ; paralysis of the iris and ciliary muscle ; dislocation of the lens ; rupture of the globe ; rupture of the choroid ; fracture of some of the bones forming the walls of the orbit, the orbital arch, or the optic foramen ; emphysema ; and abscess of the lids. It is not an easy matter to examine the eyeball in a patient in whom the lids are closed as a result of swelling, and it becomes still more difficult when considerable tenderness is added. In separating such lids and swollen lids of any description, or those forcibly closed by spasm, separation will be the more effective the nearer the margins of the lids the fingers be applied. If we wish to separate the lids so as to get a view of the cornea and sclera, we must apply the finger tips at or close to the margin of the lids, roll the latter in somewhat, and accompany separation by a certain amount of pressure toward the eyeball.

The treatment of contusions of the lids depends upon whether we see the patient early, when there is considerable swelling, or not until later, when the discoloration is the prominent feature. If he is seen early, treatment consists of cold compresses or cooling or evaporating lotions ; with these we can diminish the amount of swelling and discoloration, though it is impossible to prevent them entirely. If the patient is seen later, hot compresses and massage are indicated, to hasten the disappearance of the discoloration. Cold compresses are to be applied continuously at first, but not by means of an ice bag or a piece of ice wrapped in an handkerchief and applied directly to the swollen lids, since these furnish too intense and too constant cold. Small compresses of lint, lintine or flannel, fourfold or sixfold, measuring one and one-half inches in diameter, are to be cooled upon a block of ice and then transferred to the lids. Several compresses of this sort are placed upon the ice, and an exchange between the warm one on the lids and a cool one from the ice is effected every minute or two. In this connection, it may be well to mention that care should be taken not to allow the cold compress to cover the nose, since such carelessness causes an acute coryza in many persons. Cold compresses of this sort are to be applied during the first twenty-four hours, either continuously or every second or third hour for an hour at a time, depending upon the amount of redness and swelling. The sensations of the patient usually guide us in determining the proper amount of cold ; when the compresses are used too continuously, they will become uncomfortable.

The application of cooling and evaporating lotions are of service, though less potent than iced compresses. Such cooling lotions consist of :—℞ Acidi borici, ℥ ij ; Spir. vini, ℥ ij ; Aquæ, q.s. ad Oi. Or :—℞ Tinct. arnicæ, ℥ ij ; Aquæ, q.s. ad Oi. Both of these to be applied cold, the compresses being wrung out of the boric acid or the arnica mixture and changed frequently. After twenty-four to forty-eight hours, when the swelling has subsided, the discoloration will show itself in a more pronounced manner ; the lengthy duration of this stage can be cut short by hot applications and by massage. Flannel cloths are to be wrung out of hot water—as hot as can be borne—and allowed to lie upon the lids, being changed every minute or two ; such applications are continued for an hour at a time, and applied three times a day, or oftener, if it is especially desirable to hasten the return of the lids to a normal condition. When the skin is very sensitive, especially in women, it is well to apply a little white vaseline or any variety of bland salve to the eyelids previous to the use of the hot compresses, so as to prevent soreness and irritation of the skin. Massage is a very satisfactory means of causing a rapid disappearance of the

discoloration. The area involved is smeared with the ointment of the yellow oxide of mercury, or white vaseline will answer equally well, and then gentle massage is practised for five or ten minutes at a time, or longer, several times a day. If it is extremely desirable to cause a very rapid disappearance of the blood stain, the hot compresses may be used continuously and the massage for a number of hours. By these means the disfigurement may be almost if not entirely removed within twenty-four hours, or even sooner, after the subsidence of the swelling. The treatment just described, though simple, is very laborious.—*Medical Record*, *April* 10, 1897.

95.—ON OPHTHALMIA NEONATORUM.

By H. V. McKenzie and C. Devereux Marshall.

[The following is taken from Messrs. McKenzie and Marshall's paper in the *London Ophthalmic Hospital Reports*, December, 1896 :]

There is, perhaps, no disease to which new-born infants are subject which is so destructive, if left to run its own course, or if treated improperly, as ophthalmia neonatorum, and it has been estimated that about 30 per cent. of the occupants of blind asylums are there as the result of the ravages of this disease. Although it is so frequently met with and can be so satisfactorily combated when seen early, yet it is astonishing how, in many cases, valuable time is lost in applying feeble and inefficient treatment, and it seems to be often disregarded or unrecognised until serious and often permanent damage is done. For the purpose of again bringing the facts of the disease and the details of treatment under observation, we have thought it well to examine in detail 100 consecutive cases which have been treated at Moorfields, and as the entire management of the patients, so far as the surgical part of the treatment is concerned, has been carried out by one of us, it is easier to draw trustworthy conclusions from such a fairly large number of cases. Before entering into details, it may be well to mention the treatment which is invariably adopted, and which gives as satisfactory results as any we have tried. As soon as the child is seen the discharge is wiped away, and the eyes are washed with boracic acid lotion. The corneæ are examined, and any abrasion or ulcer is noted, special attention being paid to the situation and depth of such. Both lids are then thoroughly painted with nitrate of silver, gr. x to $\bar{3}$ i, and the method of applying this is a point upon which we desire to lay great stress. It is of the utmost importance to thoroughly paint the whole conjunctival sac, and, inasmuch

as not much more than half of the upper part is exposed when the lid is everted, it is necessary to sweep the brush underneath the lid, so as thoroughly to disinfect the cul-de-sac. The lower fornix must, of course, be treated in the same manner, but as this is so much easier to accomplish, it is hardly likely to be neglected. The most effectual manner of clearing the upper fornix is to raise the lid, without necessarily everting it, to draw it away from the eyeball, and then, with a fairly large and moderately stiff camel's hair brush, to apply the silver solution thoroughly to every part of the conjunctiva. In doing this, the brush should be kept well up against the back of the lid, so as to prevent injury to the cornea. If stringy pieces of coagulated discharge are brought away, the brush is cleaned, and after having again been charged with fresh solution, the same action is repeated until one is quite sure that all loose infective material has been removed. Great care should be taken in selecting a brush which is well made and which has no rough piece of quill projecting anywhere, as this is very likely to cause a small corneal abrasion, which will become infected, and thus act as the starting point of an ulcer. For a similar reason we are very strongly opposed to using the mitigated stick, which is inferior in every way to the solution ; it could not possibly be applied thoroughly as above described, and may very likely do far more harm than good. The application of the pure stick is under no circumstance whatever justifiable. The only reason for stating this is the fact that at least one disastrous result has come under our notice where this was used elsewhere. The painting of the lids with the silver of the strength previously mentioned is continued daily until the discharge has nearly ceased, and then a weaker solution, *e.g.*, gr. v ad $\bar{3}$ i, may be used occasionally.

The following directions are given for treatment during the intervals between which the patients are seen :—The discharge is to be frequently washed away with cotton-wool soaked in boracic acid lotion, and once an hour a drop of nitrate of silver solution in the strength of gr. i ad $\bar{3}$ i, is applied. In those cases in which the cornea is unaffected, no other application is used, but should an ulcer be present, or the cornea be infiltrated, then atropine drops, gr. iv ad $\bar{3}$ i, are applied once a day. In none of these cases was eserine used, and owing to its myotic action, it appears to us to be hardly even indicated, though occasionally cases are seen in which somewhat slow healing, and what might be termed chronic ulcers of the cornea, are greatly benefited by eserine. Such cases are very rare, and great harm is likely to result by the indiscriminate use of the drug in all cases of corneal ulceration.

The average duration of cases under treatment was 11·61 days. The longest period of time which any case took to cure was 25 days (one case only). The shortest period of time was four days, of which there were seven in number. No case was considered cured until not only had all discharge quite ceased, but the conjunctiva had assumed its natural appearance, and no further treatment was necessary.

96.—UNILATERAL ALBUMINURIC RETINITIS.

By G. E. de Schweinitz, M.D.,
Professor of Ophthalmology in the Jefferson Medical College of Philadelphia, Pa., &c.

[The following is taken from Dr. de Schweinitz's paper :]

Usually both eyes are affected in albuminuric retinitis, although it is common to find more extensive lesions in one eye than in the other, just as one kidney is often more diseased than its fellow. In many cases, in the early period of the disease, the visual defect is asymmetrical, one eye exhibiting retinitis or neuroretinitis, while the other is still free from inflammatory or degenerative changes. Subsequently, however, in the great majority of cases, both retinas become affected. My personal experience of the unilateral disease comprises the examination of two cases. (The details of the two cases are omitted here.)

In regard to the etiology of unilateral neuroretinitis, or so-called hemorrhagic retinitis, in Bright's disease, various theories may be utilised. Yvert explained a case of one-sided retinitis albuminurica by assuming an irritation of the sympathetic nerve of one side, due to a unilateral affection of the kidney. At the autopsy on his patient the left kidney was absent. He based his explanation on the opinion of Potain, who believed that the one-sided anasarca of Bright's disease, which has been observed after contusion of the kidney, and also in Bright's disease without such history, was explainable by an abnormal action of the sympathetic nerve. Eales, whose patient also suffered from an injury of the loin, with rapid unilateral retinal affection and albuminuria, is inclined to accept Yvert's view of irritation of the sympathetic as the most plausible, under the circumstances. Although we have one case substantiated by autopsy in which one kidney alone, in a state of parenchymatous nephritis, was responsible for a unilateral retinal lesion, as Knies remarks, this observation does not permit the inference that in disease of one kidney the retinal affection will be one-sided. In a case like my own, the starting-point of

the disease is apparently not in the retina, but rather in the vessels of the optic nerve, the retinal changes, hemorrhages, spots of degeneration, &c., being secondary to this condition, and I suspect that in some of the other cases reported as unilateral neuroretinitis the same lesions may have been present. It is by no means a new observation. Knies has seen hemorrhage into the optic nerve of one eye, with blindness, in a case of albuminuria; one year later the opposite eye was attacked by a pure hemorrhagic retinitis. Hemorrhages in the optic nerve have been demonstrated post-mortem a number of times under these circumstances, particularly in the investigation of Herzog Karl Theodore, and the etiological relation of nephritis to thrombosis of the retinal vein, or one of its branches is well known.

A point of some importance is that for a time a unilateral retinal or nerve-head lesion in Bright's disease is common; subsequently the ordinary bilateral character of the affection appears. It is probable that some of the reported unilateral cases have been recorded at a time when the visual defect was still asymmetrical, bilateral retinitis occurring before the termination of the case. It will be remembered that Bull, in his series of 103 cases, found that both eyes were affected at the time of the examination in fifty-four, or about half of them, from which we would infer that the other half were unilateral. Of these unilateral cases, however, all but ten of them subsequently became affected on both sides. Evidently, as Knies has remarked, unilateral albuminuric retinitis is not a rarity, a certain percentage of cases maintaining monocular retinal lesions until death. In another large percentage of cases, the unilateral character of the affection is maintained for a considerable period of time, but ultimately becomes bilateral.—*Medical News, December* 19, 1896.

97.—AURAL COMPLICATIONS IN MUMPS.

By James L. Minor, M.D., Memphis, Tenn.

Parotiditis attracts little attention as a rule. The disease demands the interest of the general practitioner chiefly through its sequelæ; and as the aurist is called in for only one of the rarer forms of these, and usually after it is well pronounced and established, the opportunities for studying its aural complications are meagre. Thus far, it has been established that a small proportion of those attacked with mumps suffer also from ear disease, which may cause simple impairment of hearing, but usually absolute and permanent deafness in one or both ears.

It usually comes on between the fourth and eighth days, and ordinarily declares itself by tinnitus, impaired hearing, dizziness, nausea, and finally labyrinthine deafness. Extension of the disease from the parotid to the ear is variously attributed to metastasis; direct extension of the inflammatory process through fissures adjacent to the inner ear; from the outer to the middle ear, and thence to the labyrinth; or by way of the Eustachian tubes. It is rare. Dr. Roosa found it in only ten cases out of five thousand ear patients treated at his office. I have collected the notes of eight cases—six seen by me, and two unreported cases, kindly placed at my disposal, from the notebooks of Dr. H. D. Noyes, of New York. A striking feature is the frequency with which the left ear is attacked. Of my cases, the left ear was affected in five, the right in one, and both in two. And I notice that Dr. Roosa's cases show a decided predilection for the left also—the left, six; the right, three; both, one. I may state that in all of my cases both parotids were involved. In none was the testicle affected.

The most important points brought out by a study of my notes can be illustrated by grouping the cases as follows:—(1) Those in which the ear trouble began and ended in the middle ear, three—Cases 2, 3, 7. (2) Those in which it began in the middle ear and extended to the inner ear, one—Case 1. (3) Those in which it began and remained in the inner ear, three—Cases 5, 6, 8—and in none of these did there seem to be involvement of the semi-circular canals, the cochlea alone being affected. (4) Those in which it began in the inner ear, the semi-circular canals, and extended first to the middle ear and later to the cochlea, one—Case 4. The frequent involvement of the middle ear certainly suggests the probability of benefit from treatment. And if these cases were promptly and intelligently treated, instead of being consigned at once to the category of incurable affections, a large proportion of them would doubtless recover their hearing.

Case 1.—Mr. M. C., aged 35 years. Both parotids involved. No orchitis. Three days later, sense of fulness, with tinnitus, in the left ear, relieved by drawing auricle from head. This condition continued for a week, when dizziness appeared, and, after two days, difficult locomotion, with tendency to fall back and to the left. The dizziness and disturbance of equilibrium after remaining some days, gradually grew less, and were almost absent when he came to me. I found the right ear normal. The left ear was deaf to all sounds—watch, voice, and tuning fork. Aside from slight retraction and a little dullness of the drums—about equally marked in each ear—nothing else could be found. He was treated a few times, and passed from observation. I saw this gentleman eight years later, and his condition was the same.

Case 2.—A. B., a man aged 28 years, had a severe attack of mumps in Jan., 1883. All of the salivary glands were involved, and constitutional disturbance was considerable. No orchitis. On the third day ear-ache, with hard hearing and tinnitus, on the left side. I saw him a few hours later,

and found injection around the entire periphery of the drum membrane and along the malleus handle; light spot indistinctly visible; no bulging (acute catarrh of middle ear); and hearing reduced to one-twelfth. Politzer's inflation was practised, with some relief, and the hot-water douche was used with much benefit. The next day the right ear became affected in the same manner, and was treated similarly. Gradual improvement set in, and resulted in a perfect cure in about one week.

Case 3.—Miss A., aged 17 years; mumps; February 9, 1891. Both parotids involved: not much general disturbance. On third day, pain, impaired hearing, and tinnitus in both ears. I found a slight amount of pus in each ear, removal of which revealed a small perforation in each drum membrane. Hearing $\frac{10}{20}$ in right, $\frac{6}{20}$ in left. Politzer's inflation and douching the ears with hot antiseptic solution daily resulted in a cure in ten days.

Case 4.—Mr. B., aged 19 years; seen May 18, 1894. Parotiditis, both sides, five weeks before. The attack was as follows:—While at work he became giddy and sick at the stomach; went home and to bed. The next day both parotids were inflamed and enlarged. He remained in bed four days longer. Then he got up with assistance and went to his office, took cold, and noticed for the first time that his hearing was dull on the left side. Temporary deafness, lasting an hour or so occurred daily for six days, and the deafness became complete and permanent. Complains of absolute deafness in the left ear (tinnitus), and slight dizziness when sudden movements are made. The appearances of the drum membrane are normal. Tuning fork heard only in right ear. At times it seems that he hears loud sounds in the bad ear, but that is uncertain. Treatment advised, but not carried out.

Case 5.—Miss W., aged 15 years; seen May 29, 1894. She had double parotiditis eighteen months ago, and has since been deaf in the left ear. There was no dizziness, nausea, or other symptom of labyrinthine involvement. Right ear normal. Left ear normal to all appearances, but deaf, absolutely, to all sounds—tuning fork and others. This case was simply one of nerve deafness when I saw it. How it began, it is impossible to say.

Case 6.—Mrs. A., widow, white, aged 28 years, was taken on Feb. 28 with mumps, the left parotid swelling first, the right five days later. Twelve days later she suddenly became faint, lost consciousness, and fell to the floor. On the next day she had a second attack, and she has been entirely deaf in the left ear ever since. A month later, examination of the ears showed the right one to be normal in every respect. The left was deaf, absolutely, to all sounds. The drum membrane was somewhat retracted and a trifle thickened, but did not depart greatly from health.

Case 7.—Mrs. W. P. B., aged 30 years. Parotiditis at ten years, leaving trouble with the left ear, which has existed since. Has naso-pharyngeal catarrh, and her hearing is worse with colds. Membrana tympani thick and retracted. Hearing voice brought up to two inches by Politzer. Right ear, hearing normal, though membrane is a little sunken.

Case 8.—H. W., aged 13 years. Mumps at two years, no ear trouble. Again, severe attack of mumps at eleven years; was delirious for a short time, and on recovery was deaf in the right ear, without tinnitus, dizziness, or other symptoms. Hearing hard to measure; but probably hears nothing in the right ear, and normally in the left. The membrana tympani is a little opaque on the left, opaque and sunken on the right side.

[Extracted from Dr. Minor's paper in the *New York Medical Journal*, *March* 27, 1897.]

98.—TREATMENT OF CHRONIC PURULENT CATARRH OF THE MIDDLE EAR.

By Thomas C. Evans, M.D.,
Lecturer on Ophthalmology, Otology, and Laryngology in the Kentucky School of Medicine, &c.

[The following is taken from Dr. Evans's paper on acute and chronic purulent inflammation of the middle ear, in *Pediatrics*, April 15, 1897 :]

In speaking of the treatment we will not discuss adenoid growths and faucal enlargements, or nasal hypertrophies, but will deal only with the local treatment of the middle ear. Most cases of chronic purulent inflammation are complicated by granulation tissue, aural polyps or caries of the ossicles or walls of the tympanum. In simple uncomplicated cases the insufflation of powdered boric acid is by far the most satisfactory treatment. Before using the powder the ear should be thoroughly cleansed with absorbent cotton. The powder may be insufflated by means of an ordinary powder blower, or by a blow pipe improvised from a glass or rubber tube. The canal must be well filled with the powder. Afterwards the ear should be closely watched, and as soon as the powder becomes moist it should be carefully removed and insufflation again practised. It is not advisable to resort to the syringe to remove the moistened powder. Pulverised boric acid insufflation should never be left to the parent, and should not be used by a physician unless he can be assured that the patient will remain under his observation. The moistened acid will often, if left alone, undergo a "caking" process, hermetically sealing up the canal and damming back the pus and mucus. This may be followed by pain, mastoiditis, mastoid periotitis, meningitis or brain abscess. When the physician must depend on the parents and friends to carry out the treatment, the safest measure is irrigation with the fountain syringe, or syringing with a soft rubber-ball syringe (Davidson No. 6). The number of irrigations must depend on the amount and nature of the discharge, but as a rule, once a day will be sufficient. The irrigating solution should be bichloride of mercury, 1 to 3,000, and as hot as the patient will tolerate. Stuffing the canal with cotton or wool, under pretence of keeping out the cold, is injurious and uncleanly, and should be prohibited.

The complicated cases are, as a rule, characterised by a more abundant and more offensive discharge. Granulations and polypi may develop in any part of the tympanic cavity, about

the edges of the perforation in the membrana tympani, or from the skin of the auditory canal ; and their treatment is purely surgical. Caustics and astringents are tedious and unsatisfactory. The safest and most satisfactory method is by the cold-wire snare. After removal of the polyp the stump should be cauterised with chromic acid. Granulations should be cauterised with a small crystal of chromic acid. In applying chromic acid to the base of aural polyps or granulations only a small crystal should be used, and especial care taken to shield the healthy tissues. If the application is confined to the granulation tissue little pain will follow its use. Nitrate of silver fused on the end of a probe may be substituted for the chromic acid, but in my hands it has been less efficient. In those cases complicated by necrosis little is to be hoped for from medicinal agents. The surgical treatment consists of the removal of the diseased ossicles and a thorough curettement of the necrosed portions of the walls of the cavity. This is accomplished by an external incision from the tip of the mastoid to the superior attachment of the auricle. This incision is made down to the periosteum and the auricle is drawn forward and the cartilaginous meatus is separated from the osseous canal. After thorough separation of the cartilaginous meatus from its bony wall, it is divided transversely as deeply in the canal as possible. This funnel-shaped mass can now be drawn forward, leaving the bony meatus entirely free, with the tympanic structures in full view. The malleus and incus can now be removed. With a gouge the posterior superior wall of the inner extremity of the bony meatus may be removed, exposing both the attic and mastoid antrum.

It is claimed by American surgeons that quite as good results can be obtained by the removal of the ossicles and curetting of the tympanic cavity through the external auditory canal. For this operation a general anæsthetic is required—preferably ether, as the operation may be somewhat tedious on account of hemorrhage obstructing the view. Both the malleus and incus are removed. The stapedius muscle is severed, leaving the stapes intact. Both operations are comparatively free from risk when performed with proper precautions. The principal dangers are the impaction, dislocation or evulsion of the stapes, or an injury to the facial nerve. The prognosis is fairly good as regards the discharge—probably about 60 per cent. are cured and 25 per cent. improved. The hearing is generally improved. The tinnitus is not changed. The complications or sequelæ of a chronic purulent ostitis that endanger the life of the patient and make the "running ear" the bugaboo of all insurance companies are mastoid disease, sinus thrombosis, meningitis, extra dural and cerebral abscess.

99.—THE TREATMENT OF LABYRINTHINE VERTIGO.

[The following is taken from the *Therapeutic Gazette*, December 15, 1896.]

Gelle, in *La Tribune Médicale* of July 16, 1896, recognises the fact that labyrinthine vertigo depends upon a number of causes. When it is due to anæmia of the labyrinth the symptoms are vertigo, subjective noises in the ears, and a tendency to syncope. It is sometimes seen in persons who have suffered from chronic diarrhœa or other diseases impairing the general nutrition, and in cases of prolonged lactation or of convalescence from grave diseases, in cases of marked albuminuria, in cachectic affections, in dilatation of the heart, and similar disorders. Sometimes it is seen in connection with arterio-sclerosis, in senility, in cases of diabetes associated with rapid loss of flesh, and in cases of bleeding hæmorrhoids. It is also sometimes due to local thickening in the ear, particularly of the drum. In many of these cases there is, in association with the vertigo, hyperæsthesia and pain. The remedies which are to be employed are the glycerophosphates and a tonic regimen, the use of stimulants, the employment of milk, and iodides if arterio-sclerosis or cardiac disease is present. The use of the milk diet, with a few drops of the tincture of strophanthus or small doses of sparteine or caffeine alternated with fluid extract of kola, has proved valuable. Should syphilis be the cause of the disease it is not necessary to state that anti-syphilitic treatment is absolutely necessary, and where an old meningitis is its cause the physician should not hesitate to use counter-irritation to the back of the neck and to employ static electricity to the head. Should the vertigo be associated with middle-ear disease, local applications suitable for such cases are of course to be employed. The bromides in many of these instances would be of value, but strychnine sometimes does other cases much good, and arsenic is a remedy always to be remembered.

Gelle believes that the sulphate of quinine is a medicine of very great advantage, in many cases of persistent vertigo following primary or secondary disease of the internal ear. Of course, many cases are best relieved of their vertigo by surgical interference with the bones of the ear. In those cases of labyrinthine vertigo with hyperæsthesia of tympanic membranes, most excellent results are to be obtained from the use of quinine. The method of treatment consists in the administration of this drug (quinine) for a period of ten days, which is then followed by another period of ten days in which the drug is not administered. The dose each day should be about 10 grains, but it may be gradually increased to 15 grains.

At first the patient may state that the use of the drug distinctly increases his vertigo. In those cases of vertigo which are associated with toothache and neuralgia of the fifth pair of nerves, sulphate of quinine is also useful and it may be well associated with small doses of aconite. If the vertigo is due to toxæmia, such as acute malarial poisoning for example, distinct treatment directed against the infection should be resorted to; and in the vertigo which arises from gout, antilithic remedies should be given. Sometimes vertigo is due to poisoning from constipation and can be relieved by the proper use of laxatives; and again, such poisons as tobacco, salicylate of sodium and the excessive use of quinine may produce it. In some instances we meet with cases of vertigo which are due to reflex irritation; they are seen most frequently in hysterical and neurasthenic persons and are frequently associated with attacks of migraine or facial neuralgia, or even with hepatic or nephritic colic. The conclusion of Gelle's article is that in the treatment of labyrinthine vertigo the use of the sulphate of quinine is of extraordinary importance, and that it is useful in the majority of instances.

[This article is of particular interest in view of the universal teaching of therapeutists that middle-ear disease contra-indicates the use of cinchona preparations. We can readily understand, however, that under certain circumstances the very congestion of the middle-ear which quinine produces may prove of great therapeutic value.—Editor of *Therapeutic Gazette.*]

100.—A CASE OF SUPPURATIVE OTITIS MEDIA COMPLICATED WITH CEREBELLAR ABSCESS.

By H. Secker Walker, F.R.C.S.,
Assistant Ophthalmic and Aural Surgeon, Leeds General Infirmary; &c.

[Space has necessitated certain omissions from Mr. Walker's interesting paper.]

On November 22, 1895, I saw, in consultation with Mr. J. W. Hutton, C. J., aged 14. He had had right otorrhœa for some years with a polypus in this ear. I had removed the polypus two years earlier, and the otorrhœa ceased. Four months before the date on which I saw him again he was attacked by pain in the left ear, which was followed by a purulent discharge, and lately this had been tinged with blood; the pain had returned and spread over the head, and become constant, being located chiefly in the occipital region. The boy

looked pale and had wasted rapidly. Five weeks earlier he had several attacks of shivering. He had vomited occasionally in the morning, constipation had been marked, and there had been some delirium at times. On examination of the left ear a polypus was seen deep in the meatus, the discharge was very offensive, the mastoid region looked healthy, but there was tenderness on deep pressure. He was very deaf in both ears. The cervical glands were enlarged, and one or two superficial ones in front of the neck had ulcerated. The temperature had been between 99° and 100°, the pulse from 110 to 130. There was no optic neuritis, no paralysis, no spasm of any of the ocular or facial muscles. The grasp of the hands was weak, but not markedly more on one side than the other. The knee-jerk was increased on the left, normal on the right side. When spoken to he answered intelligently, and his answers were not delayed. In the presence of the above symptoms there could be no doubt about the condition of the mastoid process, but I did not then feel justified in diagnosing intracranial disease, as most of the above symptoms may be present in a simple case of disease of the mastoid cells.

In the operation on the mastoid, the roof and posterior wall of the antrum were found carious and perforated, so they were removed, the dura mater lying against the temporo-sphenoidal convolutions and the lateral lobe of the cerebellum was exposed. The dura mater in each of these situations was firm, and, as I thought, probably limited the disease. After well washing out the cavity it was packed with iodoform gauze, and the superficial glandular abscess in the lower part of the neck was scraped. For the next ten days the boy did well, but on the eleventh and twelfth days vomiting and headache again occurred, and there was still no optic neuritis. These symptoms continuing, it appeared as if there must be some intracranial disease, and the symptoms pointed to cerebral or cerebellar abscess. From the amount of disease in the posterior and lower part of the mastoid process lying near the lateral lobe of the cerebellum and the occipital headache, I thought this was the more likely place in the absence of any guiding symptoms. Dr. Churton and Mr. Teale, who kindly saw the case, agreed with me as to the probability of intracranial abscess, and were also in favour of the cerebellum being the seat of the disease.

In the second operation, a fortnight after the first, the opening into the posterior fossa of the skull made at the first operation was enlarged, the dura mater reflected, and a silver drain tube passed into the cerebellum for an inch. On the second trial about ʒiij of very offensive pus welled slowly out of the tube. An unsatisfactory attempt was made to wash out the abscess

cavity, two drain tubes were left in, and dressings applied. The patient improved and the headache ceased, but the vomiting still occurred occasionally. Two days later the symptoms all reappeared ; the tube was pushed in a little further, more pus came away, and again an attempt was made to wash out the cavity. The condition of the boy now underwent much improvement, and next morning he was sitting up in bed calling for his breakfast, and much interested in the *Yorkshire Post*. For three weeks the improvement was maintained. On December 30 he had several attacks of vomiting ; the wound looked well and there was practically no discharge from the tube. Thinking that the presence of the drainage tube, acting as a foreign body, might be causing the vomiting, I removed it. For a fortnight again he did very well, and then all the old symptoms returned with redoubled force ; in a few days he changed from being a comparatively healthy-looking boy to a mere skeleton.

In the third operation, seven weeks after the second, I again opened the cerebellum, and this time a little further back. Pus was found without difficulty, and two decalcified bone tubes were introduced and carbolic lotion syringed gently through them. From this time the boy made a rapid and complete recovery, the only drawback being that now for the first time with all this disease and surgical interference he developed an attack of double optic neuritis, which, however, disappeared in a few weeks without permanently damaging the vision. The patient now has a cavity of considerable size in the left mastoid process, lined throughout with epidermis, and communicating with the external air by an opening behind the ear and by the external auditory meatus.

Remarks.—Recovery from cerebellar abscess is exceptional. As far as I have been able to learn there are only 10 previous cases on record. The difficulties in diagnosis, the absence of any special localising symptoms, or even in some cases of any symptoms at all, and the liability to a sudden fatal termination of the case before treatment can be carried out, are probably among the chief reasons why so few cases recover. In reporting a successful case of cerebellar abscess, Dr. Acland and Mr. Ballance (*St. Thomas's Hosp. Rep.*, vol. xxiii.) have drawn attention to the occasional presence of certain paralytic symptoms which may be of great service in localising a cerebellar abscess, namely, muscular weakness of the limbs of the same side as the ear disease, affecting chiefly the arm, conjugate deviation of the eyes to the opposite side from weakness of the muscles, which draw the eye to the same side, and increased knee-jerk on the same side as the otorrhœa. That these symptoms have been present in some previously recorded and unsuccessful cases of cerebellar abscess a study of this interesting

paper will prove, but their localising value had evidently not been understood; and, indeed, in one case the symptoms actually led the surgeon into the error of operating on the opposite and healthy side of the brain.—*British Medical Journal*, *March* 6, 1897.

AFFECTIONS OF THE SKIN, &c.

101.—DERMATITIS AS A SEQUEL TO EXPOSURE TO X RAYS.

By Drs. Drury, Crocker, and Reid.

A vesicular dermatitis has occasionally followed exposure to the X rays. One case has been reported in *Nature*, one in the *New York Medical Record*, for April 25, 1896; and in the epitome of the *British Medical Journal*, August 15, 1896, a case of dermatitis and alopecia is abstracted from *Deut. Med. Woch.*, July 23, 1896.

Dr. Drury's patient (*British Medical Journal*, November 7, 1896) was a gentleman, aged about 35, having symptoms of renal calculus. He was exposed to X rays to determine, if possible, the presence or absence of a stone. The first exposure occupied one hour. At first five cells were used, and later five more cells were added. The plate not proving satisfactory, he was again exposed six days later, this time for an hour and a half, ten cells being used. Nausea was felt after each exposure. The next evening after the second exposure he noticed the abdomen slightly red as if sunburned; a patch about $1\frac{1}{2}$ inch square, just below the umbilicus, being redder than the rest. This spot was exactly opposite the platinum plate in the tube. There was no itching nor pain. The third day the redness was more intense; on the fourth, some very small vesicles appeared; these very slowly increased in size during the next few days. The vesicles increased to large "bleds," and became ruptured; there was, however, no pain or itching. By the eighteenth day after the second exposure great discomfort was felt, due to the abundant discharge pouring from the affected area. The patch had by this time increased in size, and measured $7\frac{1}{2}$ inches across by $8\frac{1}{4}$ inches long. It was painless and almost insensitive. There were no granulations, as apparently only the cuticular layer was lost, having a surface exactly like that seen when the cuticle is rubbed off a dissecting room subject, except that it was a bright pink colour. It proved to be most difficult to heal.

Crocker's patient (*British Medical Journal*, January 7, 1897) was a lad aged 16, apprentice to a surgical instrument maker, who had been exposed to the X rays for an hour. A Crookes' tube had been placed about five inches from the epigastrium. The following day the skin felt irritable, and was of a deep red colour in the area subjected to the rays of the tube. This irritability increased, and six days after the experiment the skin felt stiff when he bent the body. Three days later vesicles began to form, and during the two following days increased in size and numbers. Notwithstanding the application of a lactate of lead lotion, the vesicles ruptured and the epidermis of the vesicular portion separated, leaving a raw surface. The downy hairs with which the abdomen was rather thickly covered were still present on the site of the affected area. The persistence of the hairs on the inflamed portion of the skin is interesting in connection with the depilatory action of the X rays recorded by Professor Daniel, of Vanderbilt University, and quoted in the *New York Medical Record* for April 25, 1896. In this instance the experiment was made on a co-worker, Dr. Dudley. The tube was only half an inch distant from the hair, and the exposure was for one hour. Twenty-one days later a bald spot, two inches in diameter, was found corresponding with the size of the X ray field close to the tube. In this case there seems to have been no inflammatory or other visible lesion or sensory symptom preceding the falling out of the hair.

Dr. King, of Toronto, reports in the November number of the *Canadian Practitioner* a very interesting case. The victim was a demonstrator of the Roentgen rays before public audiences, and was exposed to their influence, sometimes at first for only two hours a day, without evil effects, but when it was increased to six or ten hours, his right hand, which was most exposed, began to blister, and the nails to separate from their attachment at their proximal end. The application of picric acid not only gave relief to the burning sensation, but appeared to have some protecting influence. After resting, the hand soon recovered, and he resumed his work, his left hand being this time exposed; similar phenomena ensued, and, in addition, the left side of the face became swollen and red, and the hair of the head in front of the ear fell off, together with the greater portion of his eyebrow and the left side of his moustache, and left whisker, which was almost bare, leaving the skin very soft and smooth. He also thought that his sight was somewhat impaired. It has been suggested that workers with these rays might wear red cloth gloves, or coat their hands and face with red paint which could easily be washed off.

Professor Reid (*Scottish Med. and Surgical Journal*, February, 1897) suffered in his own person from exposure to the X rays.

The exposures to which he was subjected were as follows :— Abdomen, November 2, 1896, twenty minutes, followed by forty minutes; chest, November 3, fifty minutes, followed on November 5, by ninety minutes. The coil was of ten-inch spark, fed by ten amperes, and the Crookes' tube ("focus" pattern) was some three inches from his waistcoat as he lay supine upon the table. On the evening of each exposure marked erythema of the skin of belly and chest were noticed immediately beneath the position of the vacuum tube, and in addition slight redness of the skin of the back over an area corresponding to the exit of the rays from the body. He at once commenced to rub in lanoline, consuming four tubes of this unguent in the next twelve days. Vesicles soon appeared, and gradually collapsed, so that by the fourteenth or fifteenth the cuticle was loose. On the back, vesicles also were formed, but soon subsided. By seventeen days the cuticle began to peel off, leaving a surface exactly like that seen when the cuticle is rubbed off a dissecting room subject except that it was a bright red colour. The surface left was "raw" and "weeping," but not very painful. It was kept well dusted with powdered talc, and protected from the friction of the clothes by a pad of wadding. The discharge next became sero-purulent, and since he had then lost some thirty square inches of cuticle, and must have been daily losing considerable amounts of albumen in the discharge, it was with difficulty that he attended to his laboratory duties. By twenty-seven days the surface was dry, and in thirty-three quite healed. At the time of writing (January 11, 1897) there is no vestige of hair left upon the chest, and he had not been troubled with shaving his chin for six weeks, the hair having come out by the bulbs to the touch of the razor twenty-two days after the chest exposure, after a slight erythema of the skin, not followed by loss of cuticle. The waistcoat within which he suffered was lined with scarlet flannel. Fortunately, there seems to be little or no danger in exposing patients to one short exposure.

[Dr. G. E. Armstrong's paper in the *Montreal Medical Journal*, *April*, 1897.]

102.—SYMPTOMATIC TREATMENT OF SKIN DISEASES.

By Condict W. Cutler, M.S., M.D.

[The following is an excerpt from Dr. Cutler's paper :]

Acute inflammations of the skin with the production of pustules must be treated with antiseptic applications. As the pus must be discharged before the lesions heal, time is gained

by rupturing the pustules as soon as they have matured, cleansing the surface with a solution of peroxide of hydrogen, and applying either an antiseptic solution or ointment. If the diseased area is not too large, ointments yield the best result. Solutions or ointments containing salicylic acid 3 to 5 per cent., boric acid 2 to 4 per cent., carbolic acid 1 to 2 per cent., or ichthyol 5 to 10 per cent., may be applied with benefit. So long as there is any secretion of pus, an antiseptic lotion may be used to cleanse the diseased skin before the ointment is applied. When the pustules are discrete and deep-seated, good results are obtained and the inflammatory process checked by lightly touching over the secreting surface of the pustule, after it has been opened, with pure carbolic acid, or, better still, with a solution composed of equal parts of pure carbolic acid, tincture of iodine, and chloral hydrate, before applying the ointment. This may be repeated every twenty-four hours if necessary.

Acute inflammations of the skin with the production of papules do not always yield readily to treatment. As these papules must be absorbed before the skin returns to its normal condition, it would seem that the drying or astringent applications were the ones indicated. Camphor, sulphur, and the sulphates seem to act very well in a large number of these cases, and lotions better than ointments. When the papules are very small and confluent the drying powders may be used—as sulphur, camphor, lycopodium, starch, and magnesia. When the papules are large and discrete, absorption may be hastened by touching them with spirits of camphor.

In the exudative forms of inflammation of the skin the secretions are often found dried upon the surface. Whenever this condition exists the crusts must first be removed before treatment will have any effect. Soaking the crusts for a few hours with a bland oil—as sweet-almond oil—will soften them so that they will wash off with a little soap and water very readily. As a rule, the frequent application of water to an acutely inflamed surface, especially if the surface is denuded of its epithelium, aggravates the disease, although it may relieve the subjective symptoms for the time being.

When a chronic, scaly condition of the skin exists, and exfoliation of the epidermis without an apparent inflammation or redness of the skin, the use of oily inunctions gives the best result. Salicylic acid, owing to its physiological property of softening or removing horny layers of the epidermis, is indicated. A 5 per cent. solution in castor oil may be rubbed into the affected skin every third, fourth, or fifth night, and a soda-and-bran bath taken the following morning. After the bath, sweet-almond or some other bland oil may be rubbed on the skin. Daily massage of the skin with sweet-almond oil

is indicated; soap and water, having a tendency to dry the skin, should not be used frequently.

When the exfoliation occurs on an irritable, inflamed, reddened skin the continued application of bland oils is indicated; especially linseed oil is beneficial. Limewater or calamine, with olive oil, is also a very useful application.

Chronic inflammation with infiltration of the skin requires the use of applications to increase the circulation and stimulate the lymphatics in aiding absorption. Stimulating lotions and ointments are indicated, especially those containing tar, green soap, carbolic acid, salicylic acid, iodine, mercurial preparations, resorcin, chrysarobin, and ichthyol. If the thickened and reddened skin is covered with scales, they must first be removed before other applications are made. This is best done by the use of hot baths or poultices, applications of bland oil, or, better, 6 to 8 per cent. salicylic acid oil. After the scales are softened by oil and removed by soap and water, if the disease is limited to a small area, a solution of equal parts of tincture of iodine, chloral hydrate, and carbolic acid may be painted over the surface every three or five days, and a mild tar ointment kept applied. If the diseased area is larger, tincture of green soap may be rubbed in and a stimulating ointment applied. In those chronic thickened conditions of the skin, stimulating remedies incorporated in traumaticin or collodion act well by being kept closely in contact with the diseased area, while the compression hastens absorption. An elastic bandage is also often beneficial by causing sweating and compressing the inflammatory tissues, greatly lessening the inflammation, giving support, and checking venous stasis.

Superficially scaly diseases of the skin having a tendency to spread from the centre toward the periphery are usually parasitic. The scales should be removed and an antiparasitic lotion or ointment applied. Lightly painting the lesion with equal parts of chloral, iodine, and carbolic acid, or a strong solution of bichloride of mercury, and applying an antiparasitic ointment, usually gives good results. If the epidermis is undermined about the edges of the lesion, it should be carefully dissected away before treatment is begun.—*New York Medical Journal, March* 13, 1897.

103.—TREATMENT OF ECZEMA OF THE LEG.

By Dr. DUHRING, Pennsylvania.

[The following is taken, with some omissions, from Dr. Duhring's paper on the local treatment of the regional forms of eczema:]

The treatment naturally depends on the variety and the stage of the disease present, and also whether complications, as varix,

œdema of the subcutaneous tissue, or ulcers exist. The milder forms of erythematous, slightly scaly patches, call for no special remark as regards treatment, they being usually amenable to the well-known ointments and pastes in every-day use. In cases in which the process is acute and the surface weeping, the employment of black-wash, used as a lotion freely, followed by zinc-oxide ointment, will often afford much relief. I have made use of this simple method of treatment for a great many years, and in suitable cases it seldom fails to advance the state of the skin considerably toward recovery or cure. It is eminently adapted to acute weeping eczemas. Keeping the ointment close to the limb and proper bandaging are, of course, important. The usual method of rubbing into the skin a stimulating ointment, as practised from time immemorial, may prove beneficial or curative, but there are many better and more expeditious modes of treatment. The usage of plasters is a comparatively recent, distinct improvement over inunction with ointments in the treatment of chronic eczema of the leg, whether the patch be dry or wet. The dressing entails comparatively little trouble, and in suitable cases insures not only ease and comfort to the patient, but healing of the diseased areas. Plasters of this kind are made in various ways, and are composed of certain non-irritating bases to which the active expedient desired for the special case is added. Some plasters of this kind are manufactured already spread on muslin, according to a list of formulæ, and are both elegant and valuable preparations. Unna and Beiersdorf, of Hamburg, have been largely instrumental in perfecting the wholesale manufacture of these plasters as well as so-called ointment-muslins (*i.e.*, ointments spread by machinery on a suitable muslin fabric), both being useful in many forms of disease, not only in eczema, but also in numerous other instances in which oily plaster-dressings are required to be applied continuously. Other formulæ for similar plasters, which can be made at short notice by any competent apothecary, and can be spread on muslin or thin kid by the patient as needed, have been devised by Professor Pick, of Prague, and in America especially by Dr. Klotz, of New York, and by the writer. After a long series of experiments with different substances as plaster bases I have arrived at the conclusion that the following plaster can be recommended :—℞. Liquefied soap plaster (U.S.P.), 90 parts; olive oil, 10 parts. This is a slight modification of Pick's original formulæ, over which it is an improvement as regards consistence. It is a moderately soft plaster, distinctly adhesive, and can be spread readily in ordinary living-room temperature. To this plaster base can be added salicylic acid, tar, carbolic acid, resorcin, sulphur, corrosive sublimate, chrysarobin, and many other drugs. Plasters of this kind are particularly useful

in subacute and chronic, infiltrated patches of eczema, whether of the leg or of some other region. Chronic patches that have resisted other modes of treatment not infrequently yield to these plasters, which may be worn sometimes for several days without change. Of course, the stiffer the plaster the less frequently will there be necessity for changing the dressing. In regard to salicylic acid, my investigations, pharmaceutical and clinical, have proved that the greater the percentage of salicylic acid the softer the plaster becomes, so that less olive oil is required in the making of a plaster that is to contain 10 per cent. of salicylic acid than in one that is to contain 2 per cent. Allowance must therefore be made in writing the formula for the amount of salicylic acid. In subacute eczemas of the leg a 2 per cent. salicylic acid plaster is often valuable, allaying the itching, reducing the redness and thickening, and in improving generally the diseased condition. In chronic sluggish patches a 5 or 10 per cent. plaster may prove more useful. This method of treatment possesses many advantages over inunction with ointments, which require to be applied frequently, entailing the loss of considerable time and expense. No other method of treating patches of chronic eczema rubrum of the leg is so readily applied, cheap, and generally useful as this. For a 5 per cent. plaster the writer recommends the following proportions :—℞. Soap plaster (U.S.P.), ℥j ; olive oil and salicylic acid, of each 24 grains. For a 10 per cent. plaster no olive oil is required, the salicylic acid (48 grains to the ounce) being sufficiently softening to make the required soap plaster a moderately firm plaster mass, that without or with the aid of a little heat can be spread on kid or muslin. When large surfaces are to be covered, heat, of course, will facilitate the spreading ; but to adhere well plasters should not be too soft. In cases where a 20 per cent. plaster is required I have found the following formula the best :—℞. Lead plaster (U.S.P.), ℥j ; yellow wax, gr. xlviij ; salicylic acid, gr. c.v. It will thus be noted that the action of salicylic acid on soap plaster and on lead plaster is peculiar, tending to soften materially the plaster mass.

The value of the treatment of eczema rubrum of long standing by means of sapo mollis and water, applied with friction, followed by the application of freshly prepared diachylon ointment spread on strips of muslin and bound on with a bandage, must be referred to. It is an excellent method of treatment in suitable cases; but the applications, both of the soap and of the ointment, must be made neatly in order to obtain satisfactory results. The main disadvantages in employing it are the amount of time consumed twice daily in the dressing and the cost of the ointment, a considerable amount of ointment being requisite for each application. Many

cases of eczema rubrum, especially circumscribed forms, have at different times yielded to its efficacy in my hands, and I have frequently taken occasion to speak well of the method.

In chronic, much thickened, or verrucous patches of eczema of the leg, solution of potassa, 20 or 40 grains to the ounce, may be applied occasionally, the effect being counteracted by such emollient ointments as diachylon or a soothing diachylon soap plaster like Klotz's. Over small, circumscribed, rebellious areas, with much thickening of the skin, multiple scarification sometimes proves useful; also the application of a blister. The great value of roller bandages, properly applied, in eczema of the leg, affording not only support but also the close application of the ointments, pastes, or plasters employed, need scarcely be referred to. The sheet-rubber bandage, while of service in some cases, must be employed with discretion; for it not infrequently aggravates the disease, not only by contact with the skin, but also by exerting undue pressure, more in one part than in another part.

There remain other methods of treatment and other local remedies to be spoken of, the first of which I shall refer to being the glycerine-gelatine preparations, of special value in dispensary practice. The several formulæ in use vary somewhat according to the amount of glycerine and gelatine they contain, the more flexible having a larger proportion of glycerine. An excellent formula for hospital and dispensary practice is the following:—℞. Gelatine and zinc oxide, of each, 10 parts; glycerine and water, of each, 40 parts. This gives a product which, in the usual temperature of a living-room, is firm; but being heated in a vessel on a hot-water bath soon becomes fluid. All glycerine-gelatine preparations require heating and melting before they are applied. The application is made with a stiff bristle-brush, one layer being painted on over another. Where a firm dressing is called for, a layer of gauze or muslin is smoothly applied and glued down with another coating of glycerine-gelatine. There are certain points to be observed before making the first application and with each change of the dressing. The leg should be thoroughly cleansed with hot water and soft soap, scrubbed, and disinfected with a $\frac{1}{2}$ to 1 per cent. corrosive-sublimate lotion. The slight bleeding that may take place is beneficial rather than harmful. If large ulcers are present they may, after disinfection, be dusted lightly with iodoform, acetanilid, or some other similar powder; and if the secretion is abundant, a sterile gauze dressing should cover it. Small ulcers need no special consideration and are to be treated the same as the eczema. In from a quarter to a half-hour after the last coating of glycerine-gelatine has been put on the dressing is usually dry enough for the patient to go out, and

within twenty-four hours it is entirely dry and firm. It may be covered with a thin layer of absorbent cotton and a roller bandage. The formula given may be varied by the addition of more or less glycerine and zinc oxide, according as stiffness or flexibility is required. Various drugs, especially ichthyol (2 per cent.), may be incorporated in the jelly when called for; but the simple fixed dressing is valuable in itself. It possesses the following advantages: It causes no irritation, and in most cases healing of the ulcers and the cure of the eczema begin at once. It serves as a protection against scratching and infection from the outside. It can readily be washed off with water when this is desired. The latter should not be done too often, twice a week or once every five or six days being usually sufficient, unless the secretion is profuse. Ammoniated mercury and calomel, in the strength of from 20 to 60 grains to the ounce, are of especial service in small, subacute patches that may be benefited by inunction. For the same forms of the disease an ointment of 4 grains each of red precipitate and mercuric sulphide to the ounce, and an ointment of mercuric sulphide, 5 grains; sublimed sulphur, 2 drachms; lard, 6 drachms, are useful. These ointments are also of much service in subacute and chronic eczematous patches in other regions as well, especially upon the scalp. Patches upon the arms and forearms may also be benefited by them, but pastes generally do better here, and also upon the trunk. Inunction, even with mild ointments, oils, or fats of any kind in eczema upon the regions where the skin is tender, should always be prescribed with caution, the act of rubbing in itself generally tending to spread the disease.—*American Journal of Medical Science, April*, 1897.

104.—TREATMENT OF ICHTHYOSIS IN CHILDREN.

By David Walsh, M.D. Edin.,
Physician Western Skin Hospital, London, &c.

The curious condition of skin known as ichthyosis is of importance to those who have to do with the ailments of children. In ichthyosis proper we find dryness of the skin, which, in parts, especially on the trunk, elbows, and knees, is rough, scaly, warty, and thickened, of a greenish colour, and has an undue tendency to become dirty. The milder and more common form of the malady known as xeroderma, shows a skin dry, slightly rough and scaly, and characterised by absence or marked diminution of sweat. In both forms the patient is sensitive to cold, and is liable to eczema with formation of deep, painful rhagades or "chaps." As every one knows, the affection is nearly always congenital, although in most cases it is not

observed until some time after birth. Indeed, in those rare instances where it is said to have come on in later life we may suspect that a mild ichthyotic state has probably escaped previous notice. The etiology of this peculiar deformity is obscure. It is usually stated by authorities upon the subject to be hereditary, but that view is disputed by Unna, and is certainly not borne out by the four cases reported in this article. Both sexes are equally prone to attack. No treatment of this disease has hitherto rested on anything like a satisfactory basis. Certain facts about it are known as the result of clinical experience, but therapeutics cannot be said to have yet emerged from the empirical stage. One general observation is that the skin is less dry and rough in summer than in winter. Acting on this hint, dermatologists have attempted to rouse into activity the skin and its glands. Accordingly we find that warm alkaline baths, Turkish baths, and frictions are insisted upon in all the text-books as the best means of alleviating the discomfort of the patient. To this is added inunction, usually with simple unguents, whereby the skin may be supplied, as it were, with that artificial sebum or "oil" which its own glands have failed to supply. Lastly, other physicians have used tar and other antiseptic applications. Until lately these simple remedies completed the special list at the command of the physician. Within the last few years, however, a powerful additional weapon has been placed in his hands in the shape of thyroid gland. Ever since the clinical acumen of Dr. Byrom Bramwell showed the profound influence exerted by that drug upon the nutrition of the skin, it has been used by dermatologists in every conceivable condition of that organ. Needless to say, in a great many instances it has proved worthless. Still, there are a few diseases, such as lupus vulgaris and ichthyosis, in which the gland appears to exercise a distinctly good effect. In the latter-mentioned condition it has occurred to the writer that the action of the gland upon the skin might, as it were, be emphasised by the addition of a powerful skin stimulant, such as jaborandi, or preferably its alkaloid, pilocarpine. Accordingly, Messrs. Burroughs & Wellcome made for him tabloids containing five grains of the dried gland with $\frac{1}{10}$ of a grain of pilocarpine nitrate. Experimental evidence indicates the use of the latter drug in ichthyosis, where the hindered activity of the sebiparous glands is a prominent feature. The combined drugs were administered in four congenital cases of simple but well marked cases of ichthyosis under the care of the writer. In no instance was a hereditary history obtainable. [Details of the four cases are omitted here.] Two of these cases had been under previous treatment, and both had been shown at the Dermatological Society. One treated with ordinary

methods for seven months had not benefited materially. The second had been given thyroid gland and had improved considerable, but had relapsed. The latter patient showed much greater improvement under increased doses of the gland, and still more so when combined with jaborandi. After a few months' treatment, indeed, she herself advanced the statement that she had never been so well in her life before. The only signs of the ichthyotic condition remaining in her are the tendency of the face to get dirty and the shiny surface of the palms. This improvement has been maintained now for four or five months and has never been attained by any other plan of treatment. The point now to solve is whether thyroid gland, alone or in combination, will be able to effect the permanent cure of ichthyosis. From the history of the cases given we may conclude that thyroid gland, on the whole, is well borne by children. In the first case, a boy of four, the drug was stopped once, and that only after two months' continuous administration. In the fourth case a girl of eleven took 15 grains daily for weeks without discomfort, although symptoms had before that been caused by 10 grains. In two cases some improvement took place without local applications. However, the writer is inclined to regard the thyroid gland and pilocarpine as valuable aids to the treatment of ichthyosis rather than in the light of specific cures. Probably the best means at our command in attacking the ichthyotic condition would be the use of hot tar or other baths, with simple inunctions and the internal administration of thyroid gland and pilocarpine.—Taken from Dr. Walsh's paper in *Pediatrics*, *November* 15, 1896.

105.—CUTANEOUS TUBERCULOSIS.

By Robert B. Wild, M.D. Lond., M.Sc. Vict.,
Hon. Physician to the Manchester and Salford Hospital for Skin Diseases.

[The following is taken from Dr. Wild's very interesting paper:]

The following are the forms of cutaneous tuberculosis at present recognised, classified, however, somewhat differently to the usual method:—

- Primary tuberculosis of the skin due to direct inoculation from without.
  - A. Acute tuberculous ulceration.
  - B. Verruca necrogenica.
  - C. Tuberculosis verrucosa cutis.
  - D. Lupus verrucosus.
  - E. Lupus vulgaris.
- Secondary tuberculosis of the skin, due to direct extension from within.
  - Scrofulodermia. Skin involved by extension from
    - A. Tuberculous glands.
    - B. Tuberculous bones, joints, &c.
    - C. Subcutaneous tuberculous nodules (erythema induratum scrofulosorum).
  - Tuberculous lymphangitis.
- Doubtful tuberculous lesions .....
  - Lichen scrofulosorum.
  - Tuberculous eczema.
  - Lupus erythematosus.

Can we now form any idea as to their relations to one another, and the special factors which determine the variety which will result from a local inoculation of tubercle bacilli in the skin? The variations may be due to (1) variations in the virulence of the bacillus itself. (2) The conditions under which the parasite grows may have much to do with its rate of growth. (3) The character of the soil upon which inoculation takes place. (4) The exact site of the inoculation in the skin, whether, for example, the bacilli are introduced into the rete Malpighi, into the dermis, or beneath the skin into the subcutaneous tissue. With these variable factors modifying the course of the disease, we may well comprehend the diverse forms which tuberculosis of the skin assumes. Acute tuberculous ulceration would be the result of continued local inoculation in an individual whose susceptibility is already shown by the presence of advanced tuberculous visceral disease; there is little or no sign of protective changes on the part of the tissues; no fibrous tissue is formed to check the progress of the local disease, and the ulcer spreads indefinitely. The process corresponds to the acute form of pulmonary consumption, with rapid destruction of lung, and no formation of fibrous tissue. The verrucose forms of cutaneous tuberculosis are probably the result of a superficial inoculation in an individual not very susceptible. The bacilli are introduced no deeper than the rete Malpighi. We then see reactive changes on the part of the epidermal cells; these show themselves in the form of hypertrophy and thickening, the increased blood supply to the irritated part causing concomitant enlargement of the papillæ beneath the affected spot, and so leading to the characteristic warty condition.

Lupus vulgaris will then be the result of a deeper inoculation into the dermis itself, which is destroyed, as shown by the resulting scar. The varying appearances and rapidity of the disease in different cases are due to the varying susceptibility and protective power of the individual. The greater the reactive power of the tissues the greater the formation of fibrous tissue, and the slower the progress of the disease, the fibrous tissue forming a barrier which prevents a deeper penetration of the bacilli and a more general infection. Lupus vulgaris would thus correspond to the ordinary forms of chronic pulmonary phthisis, in which fibrous tissue is also formed round the parasitic organism, and is in most cases an effectual barrier to prevent general infection. Lupus and phthisis are both purely local diseases, resulting in local destruction of tissue, the chief difference being that in the case of the lungs the tissue destroyed is essential to life. In both cases also general infection may occur, the firmer texture of the skin, and much lesser vascularity, accounting for its infrequency in lupus. In both

lupus and early phthisis also spontaneous cure may occur, the result in each case being a fibrous cicatrix. Lupus erythematosus may, then, bear the same relation to lupus vulgaris that the chronic fibroid form of phthisis does to the ordinary form—that is, it marks the vanishing point of susceptibility and the maximum reactive power on the part of the tissues.

With regard to the treatment of cutaneous tuberculosis, the first point is to recognise all forms of the disease as preventible infective lesions, derived from some source which must, if possible, be removed. A tuberculosis of the skin ought also to be recognised as a possible source of infection to healthy persons. All the hygienic measures which are carried out in pulmonary phthisis are equally applicable, with the object of diminishing the susceptibility of the soil and increasing the reactive powers of the tissues; fresh air, especially sea air, good food, cod-liver oil. The use of certain drugs, with the same object, such as creasote or guaiacol thyroid extract, and, perhaps, even goats' serum, since that animal is almost immune to tubercle, and goats' milk, has long enjoyed an empirical reputation for scrofulous children. The use of cantharidin, thiosinamine, and tuberculin is still only of a tentative character. The local treatment consists either in the destruction of the diseased tissue by mechanical means, such as the knife, spoon, cautery or electrolytic needle, or else the application of chemical agents of a caustic or antiseptic character; each case must be considered separately as to which is the most suitable form of local treatment.

The great difficulty in curing lupus and other tuberculous lesions is due in many cases to the fact that no precautions are taken to prevent re-infection. The occurrence of the disease at all is a proof that the patient is susceptible, and that he has been exposed to infection. Is it any wonder, therefore, that on his return home, after a thorough destruction of the diseased tissues, he not unfrequently comes back to hospital in a few months as bad as before? In many of these recurrent cases it is re-infection, and not relapse or imperfect treatment, which is the cause of such disheartening results. The only method of preventing re-infection is to remove the patient from a tuberculous environment. This is too often impossible, and we can only use antiseptic applications until all the lesions are converted into sound scar tissues, and try meanwhile to improve the general state of health, so as to increase the resisting power of the patient.—*Medical Chronicle, March*, 1897.

Obstetrics and Gynæcology.

106.—BREECH PRESENTATION WITH EXTENDED LEGS.

[The following report on Drs. W. S. A. Griffith and A. W. W. Lea's paper, and the discussion upon it before the London Obstetrical Society, is taken from *The Lancet*, January 16, 1897 :]

Dr. W. S. A. Griffith and Dr. A. W. W. Lea read a paper on "Breech Presentation with Extended Legs." This paper was the result of seventeen cases, which were briefly described, and the following conclusions were arrived at :—(1) The extension of the legs in incomplete breech presentations may be either primary or secondary. (2) In the primary variety, which occurs before labour has begun, the breech engages readily in the brim and the diagnosis can be made. (3) In the secondary variety the extension occurs during labour ; this form is more frequent than the primary. (4) This complication is more frequent in primiparæ, viz., 70 per cent. of the cases. (5) The prognosis with regard to the child is not worse than is that in pelvic presentations in general. (6) Cephalic version is advantageous before labour is advanced ; it is not usually possible in the primary, but may be so in the secondary variety. (7) Most cases are delivered naturally. (8) Prophylactic reduction of the leg is only required in exceptional cases. (9) It is probable that flexion of the leg on the thigh is preferable to pulling down the leg into the vagina. (10) If aid is required in the lower part of the pelvis the soft fillet will usually effect delivery.

Dr. Amand Routh congratulated Dr. Griffith and Dr. Lea on their very valuable paper. He doubted very much if their statement that the prognosis as regards the child was no worse when the legs were extended than in ordinary breech cases was correct. This might be so in a hospital, where an exact diagnosis would be made early in labour, but in general practice he believed the result was very different. He had seen cases where a correct diagnosis of the cause of the delay had not been made, and others where a diagnosis had been made but efforts to bring down the legs had failed. He also thought that prolapse of the cord in breech cases was not so serious as had been stated in the paper.

Dr. C. Hubert Roberts asked Dr. Griffith and Dr. Lea if they could explain the cause of the curious primary extension of the legs in these cases, as nothing had been written at present on the matter. With reference to the cases, Dr. Roberts thought that the question of diagnosis was very important, and if this were always possible and certain (because it was evident that interference was necessary in such cases) the question arose: When ought they to interfere? Dr. Roberts congratulated Dr. Griffith and Dr. Lea on the small mortality of their cases. With regard to the children, he had been led to believe that the mortality was very much greater. He considered that the use of the forceps was dangerous treatment.

Dr. Spencer did not think that primary extension of the legs could be diagnosed, from the fact that they assumed that position after birth. The great majority of children tended to extend the legs after a difficult birth in that position, but he did not think it proved that the limbs had occupied this position before labour. The child presenting by the breech was known not infrequently to lie with the legs stretched out towards various parts of the uterus, but he did not think the feet were forced up to the shoulders till labour occurred except in the rare cases of *genu recurvatum*, in which, however, the joint was not ankylosed, as he understood Dr. Griffith and Dr. Lea to state, but subluxated.

After remarks from Dr. Boxall, Dr. Champneys said that he had seen a case of primary extension of the legs with vertex presentation lead to difficult delivery. A patient with a normal pelvis and a small child fell in labour which could not be terminated by natural efforts. On examination a presentation of the vertex in the first position was found together with presentation of the left arm and the left foot. He suspected twins, and thought that the foot at least was contributed by a second fœtus. The child was delivered by forceps, and no twin was present. The legs after birth lay on each side of the neck. The newness of the subject might be illustrated by the fact that so careful and learned an observer as the late Dr. Matthews Duncan told him that he had never seen a case of primary extension of the legs. As to the question when to interfere, interference should always be resorted to when in a case of breech presentation delay took place at any stage, even in the first stage. The paper illustrated the fact that the subject is still not thoroughly understood. It might be thought that the cases of difficulty would be those of large children, contracted pelves, and primiparæ. But, on the one hand, many large children were delivered easily, many primiparæ even with large children experienced no difficulty, and contracted pelves counted for a very small number of difficult cases. On the

other hand, difficulties not infrequently occurred with normal pelves and small children. One mode of delivery was not insisted on in any book that he knew, though it might be mentioned casually, that was pressure from above. In any really difficult case where the breech was too low for the bringing down of the foot this pressure, applied judiciously and firmly by a skilled assistant, the patient being in the lithotomy position, was of the greatest service, and he always used it.

107.—ACCIDENTAL HEMORRHAGE.

By George L. Brodhead, M.D., Instructor in Obstetrics, Columbia College of Physicians and Surgeons, &c.

In a few words, "accidental hemorrhage," as the term is generally understood, means the hemorrhage resulting from or taking place at the same time with separation of a normally situated placenta.

Symptoms.—(1) Visible variety. In very mild cases we have but a small amount of hemorrhage, with or without pain, depending upon the area from which blood escapes, a slight separation at the placental edge giving rise to little disturbance. In severer cases we usually find considerable bleeding with sharp pain, referred to the placental site, and can sometimes detect a certain amount of elevation over the seat of hemorrhage, due to the uplifting of the uterine wall at that point, this very distension causing pain. Some patients show marked symptoms from a comparatively small blood loss, while others feel the loss of large amounts very little. In the severe cases all the symptoms are usually well marked, pain being a prominent feature, more or less shock from extensive laceration being present, and large quantities of bright blood escaping. In some cases the flow is so profuse as to be mistaken for the hemorrhage occurring in placenta prævia. Associated with this profuse hemorrhage we find marked constitutional symptoms, extreme pallor, the skin cool and bathed in perspiration, pulse rapid and feeble, sighing respiration, air hunger, great thirst, restlessness, anxious facial expression, dull pain in the back, dilated pupils, and blanched mucous membranes. Such a clinical picture once seen, cannot be forgotten. (2) Concealed variety. As we have seen, there are some very mild cases which give no clinical symptoms. But the typical severe concealed form is the very gravest perhaps with which we must deal, for so much hemorrhage may have occurred before the true condition of affairs is discovered that the woman's life will be in jeopardy even before

treatment is instituted. The symptoms in such cases in their appearance will depend on the rapidity with which hemorrhage and separation take place. If the loss of blood within the uterine cavity is slowly and steadily increasing in amount, we find the gradual development of signs which in some cases appear within perhaps a very few minutes. Some pain will be felt, the uterus will gradually but none the less surely become enlarged, and from the distension, pain will become more or less general, the uterus being also tender to touch. Fœtal movements and heart sounds will cease, and palpation become impossible, on account of tenderness. After a time blood may appear externally, but this is merely from overflow, so to speak. If no help be given, the patient will die from shock and acute anæmia. When a large amount of blood suddenly escapes, we have shock as a marked feature, with all the signs of hemorrhage enumerated above. Pain, shock, and signs of hemorrhage then will characterise these severe cases, and yet perhaps no blood be actually seen.

Diagnosis and differential diagnosis.—From the symptoms just mentioned, the true conditions of affairs can usually be easily made out. A vaginal examination will tell us absolutely that we are not dealing with placenta prævia, and whereas pain is a prominent symptom in accidental hemorrhage, we do not find it as a rule in placenta prævia. Again, the concealed variety is radically different, in that hemorrhage occurs within the uterus, and that of placenta prævia external to it. There is one other condition with which concealed hemorrhage might be confounded, namely, rupture of the uterus. This, however, occurs as a rule late in the labour, after the membranes have ruptured, is not accompanied by enlargement of the uterus, and if the rent is large enough for the child to escape, the presenting part slips away from the brim and the regular contour of the uterus is lost. The child may be felt through the abdominal wall, but great care must be exercised with regard to this, as some uterine walls are so thin as to enable one to make out the small parts of the child with almost startling distinctness.

Prognosis.—A number of cases with proper treatment may go to full term, but, as a rule, for various reasons already mentioned, labour comes on within a short time after the first hemorrhage. In the mild cases the prognosis for the mother is very good, while that for the child naturally depends somewhat upon the period of gestation at which hemorrhage occurs. But at full term the mortality for the child ought not to exceed 15 per cent., while in premature labour it is much higher. In the severe forms the prognosis is very grave, the mortality according to Storer's figures being 46·7 per cent. for the mothers and 94 per cent. for the children. Thus we see that in the

severe cases practically all of the children die and about one-half of the mothers.

Treatment.—(1) Of the very mild cases, with slight amount of hemorrhage and little, if any, pain. The patient should be put to bed in a quiet room, on light diet, and kept as still as possible. A small dose of morphine acts well in securing perfect rest. No tampon should be used, but a clean pad can be placed over the vulva in order to exclude, as far as possible, infection, and to absorb the small amount of blood. The tampon, if used, would obscure our observation in regard to the progress of the case. Careful note must be made from time to time in regard to the size of the uterus, fœtal heart, pulse, &c., in order to guard against possible internal bleeding. Little, if any, harm can result from the careful observation of such a case, and if further separation does not occur the life of the child may be saved. If bleeding continues, or if the blood loss is considerable when the case is first seen, more active measures must be resorted to. In checking uterine hemorrhage we aim to secure contraction, and this can, as a rule, be speedily brought about by a rupture of the membranes. This treatment in the vast majority of cases will be sufficient to stop all further trouble, and the uterus will, after the amniotic fluid has drained away, generally contract about the child, and in that way close the uterine sinuses. We can, and should, I think, assist nature in such cases, by frequent administration of moderate doses of strychnine and quinine. Then from time to time, if slight bleeding continues, the cervix should be stretched to some extent, using, however, but little force. Should the measure spoken of prove ineffectual, delivery must be completed in as short a time as is practicable, consistent with the welfare of both mother and child. Manual dilatation should be used, and this followed by the application of forceps, or the operation of version. (2) In the severe form, visible or concealed, the rupture of the membranes should be the first treatment used. If active bleeding is going on, steps must be taken at once towards emptying the uterus. Manual dilatation of the cervix must be performed rapidly, as the urgency of the case requires, and the child delivered by forceps, version, or craniotomy, careful attention being constantly paid to the general condition. In such cases delay is very dangerous, and only quick intelligent treatment will give any hope of success. If, on the other hand, hemorrhage has apparently ceased, or the patient be in very poor general condition, it is better to empty the uterus slowly, thus avoiding the shock of a rapid extraction, and at the same time pay all possible attention toward the improvement of the state of anæmia and shock. By so doing we certainly increase the chances of success by adding, at least, no other element

of injury and consequent shock. Fluid must be supplied in large amounts by mouth and rectum, and if necessary by infusion. Stimulation must be very free, and too much stress cannot be laid on the free use of hot saline stimulating enemata. It is remarkable to watch the improvement in the heart action after the exhibition of one or more hot salines. The system needs fluid urgently, thirst will be greatly relieved, the heat and stimulants both act well on the heart. During the past year there have been four interesting cases of accidental hemorrhage at the Sloane Hospital.—From Dr. Brodhead's paper in the *Medical Record*, *February* 27, 1897.

108.—THE ANTICIPATION OF POST-PARTUM HEMORRHAGE, WITH REMARKS ON THE ACTION OF ERGOT ON PREGNANT WOMEN.

By Lombe Atthill, M.D., Ex-Master of the Rotunda Hospital, Dublin.

[The following excerpt is taken from Dr. Atthill's paper on this subject, with remarks on the action of ergot on pregnant women :]

I have long since been convinced that, to be of real use, ergot requires not only to be administered some hours before its action as a uterine hæmostatic is needed, but also that the dose must be repeated, and that more than once, at intervals of about two hours, otherwise the effect is uncertain, and so transient, as to be of little value. I do not, therefore propose to discuss this part of the subject, but to point out that in patients in whom a tendency to dangerous post-partum hemorrhage is known to exist, or indeed is suspected to exist, the danger may, in the majority of cases, be averted, or at least greatly lessened, by treatment carried out antecedent to the expected date of the occurrence of labour. I had not been long in practice before I became convinced that the theory then universally believed, that women should not take any drug, especially tonics such as quinine, iron, and the mineral acids, during the menstrual period was erroneous, and I took every possible opportunity of watching the effect of such medicines on women during menstruation, with the result I expected, namely, that no drug taken in its usual dose had any effect on the function in healthy women. This fact led me to administer drugs during pregnancy when necessary with equal freedom ; and in the case of a lady whom I knew to have a tendency to post-partum hemorrhage, I on one occasion administered quinine in 4 or 5 gr. doses up to

the advent of labour for the cure of neuralgia, and on this occasion for the first time no hemorrhage occurred with her. This struck me as remarkable, and it occurred to me that the unexpected freedom from hemorrhage might have been due to the tonic effect of the quinine on the muscular fibres of the uterus ; and, emboldened by the result in this case, I administered quinine to other patients in whose cases I feared the occurrence of hemorrhage. About this time the result of the action of ergot in a case of threatened abortion, to which I shall presently refer, induced me to prescribe ergot combined with strychnine for a patient in whom from previous experience I feared post-partum hemorrhage for some days before labour set in, and I was gratified by finding that although there was a little hemorrhage, it was as nothing compared with what had occurred in her previous confinements. From that time it has been my invariable rule to carry out this practice in all cases in which I had reason to fear the occurrence of hemorrhage, and the results have been most satisfactory. I never once have had occasion to regret its adoption, and never observed the most trifling injurious effects on either mother or child to follow, and this although the ergot has been taken regularly for five or six weeks prior to the occurrence of labour. [The illustrative cases are omitted here.] I might easily quote other cases ; but these are sufficient to prove, at least, to my satisfaction :—(1) That ergot, alone or in combination with strychnine, may be taken with absolute safety to both mother and child by pregnant women, in the usual doses, and for a considerable time. (2) That when taken continuously for not less than three weeks prior to labour, it tends to delay the setting in of uterine action, and I may add that in no case have I ever seen it bring on labour in a case in which uterine action had not already been excited. (3) That its exhibition for some weeks prior to the commencement of labour arrests the tendency to post-partum hemorrhage, and facilitates the involution of the uterus.

When I was a student we were cautioned not to administer ergot to women in labour till the os was fully dilated, it having been shown that, unless the child was born within the space of two hours after the specific action of ergot was manifested, that is by the occurrence of short, sharp pains with hardly any appreciable interval, the child was likely to suffer, and was not infrequently born dead. This statement I can verify as being perfectly true, but then the death of the child was not due to any poisonous property possessed by the ergot, but to the utero-placental circulation being interfered with in consequence of the rapid, almost incessant, contractions of the muscular fibres of the uterus. That this is so is proved by the fact that where the ergot failed to induce its specific effect the child did

not suffer. True it is that, as stated by McClintock, some children were born dead even when ergot pains had not been induced, but remember he wrote at a period when the forceps were very rarely used. During the six months I spent as a pupil at the Rotunda, the forceps were never, so far as I know, once applied. Labour was allowed to linger on sometimes for days, and when the fœal heart ceased to be audible the head was lessened and the woman delivered. Now, perhaps, we run to the other extreme, and apply the forceps too frequently, but that a child should be stillborn whether ergot was given or not, when labour was permitted to linger on for days, is not to be wondered at; that the death of the fœtus was, however, due to the administration of ergot, when the true ergot pains did not occur, I disbelieve, and this conclusion I arrived at, while still a pupil, and its truth I am now convinced of. The routine of giving a dose of ergot, when post-partum hemorrhage has set in, is generally a harmless, and sometimes a useful, practice. In perhaps one in twenty cases it may induce the uterus to contract, but to be of any permanent use, the drug should be administered some hours previous to the occurrence of the hemorrhage, and the dose should have been repeated at intervals of a couple of hours or less. If then we meet with a patient in labour in whom a tendency to post-partum hemorrhage has been previously observed, ergot should be administered at once, and if delivery does not take place for a few hours, and if the dose be repeated, the result is likely to be satisfactory.

It is to be borne in mind that I am not discussing the methods by which post-partum or any other form of hemorrhage occurring unexpectedly during parturition should be treated, but that I confine myself to advocating the value of the exhibition of ergot prior to the end of the period of utero-gestation in a certain class of cases, and I am far from under-estimating the advantage of rupturing the membranes, the use of friction over or compression of the uterus, cold externally, or hot-water douches when necessity arises, but I wish, if possible, to prevent the necessity for such. Although foreign to this subject, I wish to state my experience of the use of ergot in cases of threatened abortion; in these hemorrhage without pain is often the first symptom, and that indicates that the ovum is partially detached; when wholly detached hemorrhage as a rule ceases, and the contents of the uterus are sooner or later expelled. But it is seldom that we can say with certainty when it has become hopeless to save the ovum, and therefore it is our duty to persevere in our attempts to do so as long as possible; and of all methods to this end, absolute rest in bed for a considerable time is, without doubt, the best. But it is most irksome to a patient,

specially a mother with probably young children needing her care, to submit to the restraint imposed on her by keeping her bed for weeks, and many will refuse to do so; indeed, some women become so prone to abort that it seems useless to try to enforce prolonged confinement to their room, and then it is obviously better that the ovum should be quickly got rid of. Such a case occurred to me some five and twenty years ago. About that time I had as a patient a delicate young married lady, who in the course of the preceding ten months had twice aborted at about the tenth week of her pregnancy, and on each occasion alarming hemorrhage had occurred. I attended her on the second of these. She became pregnant again within two months, and at the expiration of almost exactly the same time as on the previous occasions, hemorrhage set in, which she knew was the forerunner of another miscarriage. I saw her a few hours later. There were no pains, but the os was patulous, and her state identical with what it had been in the early stage of her previous illness. I came to the conclusion that she must certainly abort, and I at once put her on ergot and strychnine, with the view of getting rid of the ovum rapidly. The dose of ergot was repeated every two hours, and I watched this lady all day, hourly expecting that she would have a recurrence of the hemorrhage which had so alarmed her and me on the previous occasion. But instead of this the hemorrhage lessened; night came on, and she slept. Next day the os was not the size of a split pea. This lady went to the full term, and gave birth, to her great joy, to a son, now a strong man of six feet high. From that day on I invariably administered ergot to women threatened with abortion. In some it produced no effect whatever; in a few it induced uterine action, and the expulsion of the ovum followed. In the majority the threatening symptoms disappeared, and pregnancy proceeded normally; but in not one of them did I regret having administered ergot, and I am satisfied that if the ovum is not blighted, that is, ceased to be a living body, that ergot acts as a uterine tonic, and renders the organ in many cases fitted to undergo the further changes which take place in it during utero-gestation, but if the ovum is detached and blighted, then it becomes, as it were, a foreign body, and ergot is then likely to stimulate the uterus, and to expel its contents. This opinion is, of course, based only on the results of my personal observation, but of its correctness I have no doubt.—*British Medical Journal, March* 6, 1897.

109.—SECONDARY PUERPERAL HEMORRHAGE.

Secondary hemorrhage comes on suddenly with little, if any, warning. Sometimes considerable mental agitation precedes it, but frequently the first intimation which the nurse has is the flow of blood, or the weakened aspect of the patient. If the hemorrhage is not concealed, the flow is copious and bright in many cases ; in others, it begins gradually, is dark in colour, and persists until syncope results. The uterus is relaxed and soft, sometimes distended with clots, and often displaced backward in the abdomen. If bleeding occurs as late as the end of the first week, the uterus may be found in the hollow of the sacrum. On palpating the abdomen, the hard outline of the organ is lacking, and in severe cases it cannot be felt. The prevention of such bleeding lies in the thorough study of each pregnant patient. Where such a woman is evidently ill nourished, her blood should be examined, and iron or arsenic, or the peptomanganate of iron should be given as indicated by the blood-count. Where pregnant women become anæmic from toxæmia, the eliminative organs must be stimulated to act properly. Where insufficient nourishment is the cause of the trouble, proper food must be procured for those who are needy, and the diet of others must be properly regulated. The depressing influences of lack of fresh air, hard work, and exhausting anxiety must be removed as far as possible.

During labour, the obstetrician must keep in mind the danger of uterine relaxation which follows prolonged labour, and which accompanies the improper use of certain uterine stimulants. Should the mechanism of labour be at fault, he must correct this without delay ; should an insurmountable obstacle to delivery be present by reason of disproportion between the fœtus and the pelvis, he must detect this before exhaustion supervenes. In prolonged labour, the mother's strength must be conserved by proper nourishment and the use of appropriate tonics, anæsthetics, and anodynes. Clinical experience proves without doubt that the giving of ergot during labour predisposes to secondary hemorrhage. If uterine contraction is deficient, it is best stimulated by a general tonic such as quinine, or a moderate amount of alcohol, and uterine force is best supplemented by manual pressure, or traction by forceps. Ergot produces excessive muscular contraction ending in relaxation, and strychnia brings about a tetanic condition of the uterine muscle, which ultimately terminates in exhaustion. Contrary to what is often stated, sudden emptying of the uterus does not necessarily predispose to bleeding ; in Cæsarean delivery, the child is suddenly removed, yet serious bleeding rarely follows unless the patient has been exhausted before

the operation. Haste in expressing the placenta is a common cause of secondary bleeding. So long as the patient does not bleed, the placenta may be left within the uterus from twenty minutes to half-an-hour with positive advantage. It will gradually become separated and ready for expulsion. Should it be necessary to deliver the placenta, Crédé's method is unquestionably best and safest. Where the hand must be introduced, the placenta should be removed very gradually, and the inner surface of the womb thoroughly examined by touch to be sure that no portion of the after-birth remains.

After labour, when birth has been exhausting and delayed, uterine relaxation and secondary bleeding should be feared, even if the patient does well immediately after labour. Following delivery, the uterus should be well douched with hot sterile water, and moderately tamponed with sterile or antiseptic gauze. The vagina may also be filled with antiseptic gauze, but not to the degree of over-distension. The uterus should be anteverted and, if possible, anteflexed by the hand of the physician, the fundus being carried above the promontory of the sacrum, and bent strongly forward. It should be retained in this position by the hand of the doctor or nurse until it ceases to relax, and remains well contracted. When such is the case, the abdominal binder, or many-tailed flannel binder, used after abdominal section, should be applied from above downward, making firm pressure upon the uterus. Three towels may be rolled firmly, and one placed above the fundus, and one on each side of the womb beneath the tightly pinned binder ; this is more efficient than a simple pad, but if bleeding is feared, the binder should not be applied, but the womb should be watched by the hand of the nurse or doctor. After the womb is empty, strychnia and ergot are indicated in cases where labour has been prolonged. Care should be taken that these remedies are used for the first thirty-six or forty-eight hours after delivery, and not simply in one or two large doses ; the better way is to give $\frac{1}{40}$ of a grain of strychnia and 20 drops of ergot every six hours for a day and a half, or two days. Rectal injections of whisky, well diluted with warm water, serve well in these cases. In nervous and frightened women, opium is an important aid in preventing secondary bleeding ; in the form of codeia, given by hypodermic injection, it allays fear and anxiety, and thereby prevents nervous exhaustion ; in doses of $\frac{1}{4}$ to $\frac{1}{2}$ of a grain it serves a most useful purpose.

In the presence of secondary hemorrhage, vigorous treatment is demanded. The uterus should be grasped and kneaded, and a douche of hot sterile water promptly given. Upon the physician's arrival, he should at once explore the uterus with the aseptic hand, and remove any large clot or loosened bit of

placenta which may be within. An intra-uterine douche of hot sterile water should accompany this manipulation. When the womb is clean and empty, it should be tamponed with aseptic gauze, and carried into proper position, the fundus just above the brim of the pelvis, and directed strongly forward. Strychnia, given by injection, and ergot, by the mouth, will usually complete the treatment. The uterus must be watched by the hand until it is evident that relaxation will not occur. For the anæmia which follows severe secondary bleeding, the injection of normal saline solution under the skin is clearly demanded ; from a half-pint to pint should be given as soon as possible, and this may be supplemented by injections of warm water and whisky in the rectum, thus securing the rapid absorption of considerable water. The writer recently saw a case in a young anæmic girl in which secondary bleeding came on suddenly, twenty hours after delivery, after the patient had dropped asleep ; it was promptly checked, only to recur twenty-four hours later. In each instance it yielded promptly to uterine massage and the hot douche, without further treatment ; the patient ultimately made a good, although prolonged, recovery from gestation.—From Dr. E. P. Davis' leader in the *Medical News*, *December* 12, 1896.

110.—ON THE OPERATION OF SYMPHYSIOTOMY FROM THE GENERAL PRACTITIONER'S POINT OF VIEW.

By James Braithwaite, M.D. Lond.

Obstetric Physician and Surgeon to the Leeds General Infirmary, Editor of the "Retrospect of Medicine," &c.

[Some few details in Dr. Braithwaite's paper, which is based on three cases, have been here omitted owing to space.]

I propose to discuss the questions, first, whether the operation answers its purpose, and second, if it does, is it likely to take its place in the regular midwifery practice of the general practitioner, and if it is not, why not? The first point, then, to inquire into is, whether or not the operation really answers its end, that is, can women be delivered by it who have contraction of the pelvis of from 3 inches (true conjugate diameter), up to about 3½ or even 4 inches, with an unusually large head. Of course the size of the head of the fœtus makes a considerable difference, and if the fœtus is not quite at full term it may be delivered, although there is only a diameter of 3½ inches. The smallest conjugate diameter was in my third case, which

occurred in May, 1896, and the size was $2\frac{3}{4}$ inches only. This size, however, is too small to enable a normal head at full term to be delivered, and I was compelled, after turning the child to do craniotomy on the after-coming head. It had been ascertained during the turning, however, that the child was dead. Had it not been for the division of the pubic symphysis, however, simple craniotomy would not have sufficed, and I doubt whether it would have been possible to introduce the hand and turn, or even to turn without introduction of the hand. In the other two cases the true conjugate measured respectively $3\frac{3}{4}$ inches, and 3 inches. In the 3-inch pelvis, symphysiotomy was combined with induction of premature labour at eight months. Of my three cases, all the mothers recovered well, and two of the infants lived and are still living, including the one in which premature labour was induced at eight months. This patient had already had craniotomy performed three times. If the large statistics of Pinard, published in January of 1896, are taken, the utility of the operation is well seen, for out of 69 cases treated at the Baudelocque Clinic, 62 mothers and 61 children were saved, 7 mothers and 8 children being lost. Morisani's statistics are these :—Out of 241 cases he had a mortality of 11·6 per cent. mothers, and 19·9 per cent. children. There cannot, therefore, be any doubt that the operation answers its purpose, and that by it the lives of infants can be preserved, whilst it is practically without danger to the mother, provided strict antisepsis is ensured. It must not be supposed that the maternal mortality arises from the operation, but rather from other causes necessarily attending delivery in states of exhaustion, depression of mind, and greatly prolonged in duration.

Admitting, then, that the operation ought to be done in suitable cases, and that if it is not done in such cases the life of the child is needlessly sacrificed, we next come to the question whether it is likely to take its place in the regular midwifery practice of the general practitioner? In order to answer this, I will first describe the operation, as this is the best way of appreciating its difficulties. The first point is, of course, cleanliness of hands and instruments. The patient must be put under ether or chloroform ; the pubic hair should be shaved or cut close, and the vagina well douched with warm carbolic water. An important question now naturally presents itself to the operator, viz., shall the forceps be fixed on the fœtal head before dividing the symphysis, or afterwards? In all my three cases I tried to put them on first, tying the handles together to ensure their remaining in position. My impression now, however, is that this is wrong, and that it is better to put them on after division of the symphysis. In the third case, in which the

diameter was only $2\frac{3}{4}$ inches, it was impossible to put the forceps upon the head of the fœtus because of the extreme deformity. A central incision must now be made through the skin and fat, commencing $1\frac{1}{2}$ inches above the symphysis, and continued downwards to about a quarter of an inch below its upper border. Next, the aponeurosis which comes into view is divided to the same length as the wound in the skin. This is done by making a small incision in it, and passing through this a director to guide the scalpel which completes the division. Any bleeding points must be stopped by clips or by catgut ligatures. Next, separate with the end of the finger or with the blunt director, the two recti muscles from one another, and nick their origin to the pubic bones to about one-third of an inch on each side of the middle line. Next pass the index finger of the left hand a little behind the symphysis, the situation of which is then accurately felt. A second aponeurosis or fascia is now felt, which must be cut through close to the bone, and parallel to its edge. This is best done by scissors, preferably curved on the flat. Next, gradually and carefully separate the parts behind the symphysis from the bone to at least half an inch from the central line on each side. The nail must be kept close to the bone so as not to tear into the tissues, and the separation must be carried very carefully and slowly to the lowest border of the symphysis. If this is not done, directly the symphysis is divided and separation begins, these tissues will tear, probably with laceration of the urethra, and considerable venous hemorrhage. All is now ready to divide the joint ; but it is covered by the skin and superficial fat so that it cannot be seen. Morisani divides it from behind, using a somewhat sickle-shaped knife which is made on purpose. In my first case I used an ordinary hernia knife, and then learned this point, that as the bones at the symphysis are convex on their posterior surface from above downwards, it is almost impossible to divide the lowest edge of the cartilage, because the point of the knife cannot be brought to bear upon it. In my third case I found a partial bony union of the joint, very small in extent it is true, but sufficient to prevent the cartilage being divided by a knife alone. I therefore think it better not to attempt to divide from behind. In order to get at the front of the joint it is only necessary to pull the skin and superficial fascia downwards, and they are so extremely loose and movable that there is no difficulty in doing this. In my second case a colleague who was present remarked that it would be better to make the incision through the skin transverse instead of longitudinal, and in that case, on pulling down the lower edge of the incision, a good opening would result, enabling the cartilage to be seen better. I tried this in my third case, and it answered very well, but we found afterwards that the

wound became a pocket, and could not be drained, so that the longitudinal incision is, I think, the best. The cartilage may now be divided by any cutting instrument such as an ordinary scalpel.

If any difficulty is found—and this is extremely probable—a sharp chisel is necessary. This, with a few light taps with a mallet, will complete the division. Should the pains be strong at the time, it is necessary that the hips be supported either by manual pressure or a flannel bandage, lest the separation of the bones should be too sudden. I did not find any occasion for this, as in all my cases there was uterine inertia from exhaustion. The skin must now be allowed to slip upwards and cover the divided symphysis, that it may remain uncontaminated by the vaginal discharges. All is now ready to complete delivery, and, the patient still remaining in the lithotomy position, the head must be delivered by means of the forceps, which must now be put on, if it has not been done previously. It will, however, frequently be found that the forceps cannot be applied to the head because of the extreme deformity. This was so in my last case, and I was compelled to deliver by turning. In the second case I could apply the blades to the head, but they slipped off when any traction was made ; so that in this case also I was obliged to turn. In the first case only delivery was effected by the forceps alone. In this operation there is no danger of wounding the bladder, provided you keep close to the bone. There is, however, considerable danger of laceration of the urethra occurring during the great separation of the symphysis, when the head is passing. This is best avoided by separation of the tissues behind the symphysis as described, and by slowness in completing the transit of the head. After delivery is complete, and the placenta removed, the uterus as well as the vagina should be well douched with hot carbolic water, and then attention can be directed to the wound, which during the extraction of the child should be covered with a sponge wet in carbolic water. If now there is any hemorrhage from laceration it must be stopped by passing in and out—on the vaginal surface, so as to surround the bleeding spot—a needle threaded with catgut, or, if that is not obtainable, with ordinary sewing silk which has been boiled for a few minutes. When the ends of the silk are tied on the free surface, any hemorrhage will be arrested. This can be repeated at different places, wherever hemorrhage is going on, and answers better for venous hemorrhage than the use of artery forceps. An alternative plan is simply to plug with antiseptic gauze, well iodoformed. During the subsequent progress of these cases, I found that no bandage or binder of any kind will keep the bones firmly in contact, as the movements of the patient are

continually displacing it. If, however, what is called a workman's belt is used, which has three or four straps and buckles, and which can be bought at any clothier's shop for eighteenpence, the apposition of the bones is perfect, and is maintained easily, so that in all my three cases firm union took place in about four weeks. It is very important to see that no soft tissues intervene between the ends of the bone.

Having now described the operation, the next question is, is it applicable to the ordinary practice of medical men in town and country? It does not seem to me that there is any real difficulty, and certainly no danger in the operation itself, but, of course, individual men differ much in their adaptability to circumstances to which they are unaccustomed. The co-operation of one other medical man is essential, and if when a case requiring symphysiotomy occurs, and the attendant in charge is willing to call in the assistance of his nearest neighbour, unless he has a good assistant, this can be surmounted. The real impediment, however, is this, that the operation is one of emergency requiring a number of instruments. I recommend that every medical man should keep the instruments ready packed, or that in small batches of two, three, or four medical men, the instruments and everything necessary should be kept ready for common use, all ready packed in a parcel or in a small bag. These men should arrange to assist each other whenever required. It is not necessary in country practice for any man of special experience to be sent for, and, indeed, there is not time to do so as a rule.—*Quarterly Medical Journal, January*, 1897.

111.—UNDIMINISHED MORTALITY FROM PUERPERAL FEVER IN ENGLAND AND WALES.

By Charles J. Cullingworth, M.D. Durh., F.R.C.P. Lond.,
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[The following is an excerpt from Dr. Cullingworth's weighty presidential address to the London Obstetrical Society :]

Although puerperal fever has practically become a thing of the past in our lying-in hospitals—witness the remarkable record of the General Lying-in Hospital and the equally remarkable results that Dr. Godson was able the other day to point to as having followed the introduction of antiseptics at the City of London Lying-in Hospital—it is impossible to ignore the fact that there has not been a corresponding diminution of

mortality from puerperal fever in ordinary private practice. It was not to be expected that those who had already been engaged for some time in practice would at once assimilate the new ideas and adopt what appeared to many of them not only new but revolutionary and unnecessary methods. But as time wore on and a younger race of men came upon the scene it was not unnaturally hoped that an improvement would take place, and that a mortality which had been conclusively shown to be preventable would show some signs of diminution. How is it that this hope has not been realised? Either the profession is not convinced of the possibility of stamping out puerperal fever by the methods that have been proposed or it has failed to carry out those methods with the thoroughness that can alone ensure success. As a responsible teacher of midwifery I have often asked myself the question how far the teaching is at fault. Do we teachers sufficiently impress upon the minds of our students the infinite importance of this subject? Are we ourselves careful to show by our own example the importance of the precautions that we lay down in the lecture theatre? Are we careful never to convey, by thoughtless word or careless act, the impression that the rigid adoption of antiseptic measures is excellent in theory, but does not, after all, matter so very much in practice? If we are not, is it to be wondered at that when our students go out into the world and are released from the discipline of the school and hospital, they should forget how much depends on attention to minute detail, and should discharge their consciences in this matter of antiseptics by pouring a few drops of carbolic acid or a drachm of tincture of iodine into the water in which they wash their hands, or even by simply bidding the nurse administer a similarly prepared solution as a douche? I am not painting an imaginary picture. The methods at present employed by many who if questioned would be quite ready to proclaim their belief in antiseptics, and who glibly assure one they have used "every antiseptic precaution," are often so crude and imperfect as to be a ludicrous travesty of genuine antiseptic midwifery.

The questions I have just been asking I ask of myself as well as others. It is clear that something is wrong. We shall be most likely to find out what that something is by a process of self-examination, both on the part of teacher and taught, however disagreeable that process may be. A great deal has been written on the superiority of asepsis as compared with antisepsis, and it has become the fashion in some quarters to speak of antiseptics as though they had had their day and to maintain that a condition of asepsis can be attained by cleanliness alone. It is well, however, to bear in mind that the triumphs of our lying-in hospitals have all been won by the

scrupulous use of antiseptics, and that sterilisation, which is the essential element in aspetic surgery, is impossible in midwifery practice. When we have thoroughly washed our hands, as we all now recognise the necessity of doing before making an examination in the lying-in room, it costs very little trouble to adopt the additional safeguard of immersing them for a few moments in an efficient antiseptic solution. And as a matter of experience those who are most diligent in the use of antiseptics are also the most diligent in carrying out all the details of elementary cleanliness. I firmly believe that if the simple antiseptic precautions with which every one is familiar, were conscientiously adopted puerperal fever would be as rare in private practice as it is now in the best lying-in hospitals. "The only way," as I have elsewhere observed, "to avoid (the present) terrible mortality, and to avoid also the terrible amount of puerperal disease, which, because it is not fatal, is apt to remain unrecorded, is for every practitioner in midwifery to recognise his personal responsibility in the matter."

In an excellent little book of advice to mothers the writer, herself a woman, after doing me the honour to quote the foregoing passage, makes the following significant comment: "Now I maintain," she says, "that women themselves have a personal responsibility in this matter also. They should not be content passively to allow their lives to lie in the hands of others who may or may not chose to use antiseptics. Women who are expecting their confinements should satisfy themselves beforehand that the doctor and the nurse engaged to attend will conscientiously use these safeguards." This is plain speaking, but who will be disposed to find fault with it? It will be gathered from what I have said that, in my opinion, the high death-rate from puerperal fever in this country is attributable mainly to the large number of confinements attended by ignorant and untrained midwives and to laxity and half-heartedness in the use of antiseptic precautions in private practice. The remedy for the first of these evils is to insist that women who call themselves midwives shall possess at least such an elementary knowledge of the subject as shall enable them to know how to prevent septic infection. The remedy for the second evil is thoroughness.

It is now nearly nine years since I published, in the form of an introductory address at St. Thomas's Hospital, a plea for the more general adoption of antiseptics in midwifery practice. In that address I brought together as concisely as possible the evidence that had been gradually accumulated in proof of the preventability of puerperal fever, and I showed in a series of tables the magnificent results that had followed the introduction of antiseptic measures into the leading maternity hospitals of

Europe and the United States. I have reason to know that the arguments I then brought forward were not without effect upon the practice of individual members of the profession. I ought perhaps to apologise for returning to a subject that may seem to many to have been long ago thrashed out. The temptation was indeed great to chose some newer topic for an occasion like the present. But the more I reflected on the matter the more it was borne in upon me that it was my duty once more to raise my voice on behalf of the mothers of this country. The Obstetrical Society of London has always been foremost in the effort to reduce the present terrible mortality from childbirth. It seemed to me that I could not more suitably signalise my succession to this chair than by calling attention to the sad and disappointing fact that has formed the text of this address. If anything I have said shall have the effect of stirring the minds of my professional brethren on this subject and of diminishing to ever so slight an extent the present terrible death-rate from a disease which is now generally acknowledged, nay, proved, to be almost wholly preventable, I shall feel that I have achieved something worthy of the occasion and have done something towards justifying your choice of a president.—*Lancet, March* 6, 1897.

112.—THE OBSTETRIC SIDE OF HYSTEROPEXY.

The current literature of the last three years has been teeming with reports of complications in pregnancy and labour subsequent to, and directly traceable to, a previous operation of ventral or vaginal fixation of the uterus for retrodisplacement or prolapse of that organ. So frequently have these unfortunate results occurred, especially after vagino-fixation, that the latter operation has already been practically abandoned, even by its originators, and the most earnest advocates of the ventral operation have modified their technique in various ways in an endeavour to avoid as far as possible the difficulties alluded to. The variety and comparative frequency of the complications after hysteropexy have recently been presented by Dorland, of Philadelphia, in a comprehensive paper on the subject, and the deductions that he has drawn from his investigations are well worthy of a few moments' consideration. In the first place, he ascribes all the ill results noted, not to the operation *per se*, which, he rightly claims, is the most suitable cure for the uterine displacements in question, but to some defects in the technique. The truth of this statement is amply proved by a comparison of the results obtained by the German and American operators. In the hands of the former the operation becomes no longer that which was intended by its originators—namely, a true

suspension of the uterus, whereby that organ is freely mobile—but an absolute fixation of the uterus to the anterior abdominal wall, rendering its growth and development in a subsequent gestation either an utter impossibility or a matter of extreme difficulty. The American gynæcologists, on the other hand, who have studied the problem most assiduously, have concluded that the suspension is best accomplished by including in the grasp of the sutures—which should not be placed on the posterior surface of the uterus, but upon the fundus just posterior to the transverse median line—the peritoneal surfaces only of the uterus and abdominal wall. All scarification of the apposed surfaces is carefully avoided, and the uterus remains practically free to move in any direction. The great majority of the complications reported have followed the German method of operating, thereby demonstrating the undoubted superiority of the method practised in this country. Another defect in the technique of the operation is to be found in an improper implantation of the sutures into the abdominal wall. If they be placed too far above the symphysis pubis, the uterus is lifted out of the pelvic cavity and becomes an abdomino-pelvic organ, or the entire structure, cervix included, may lie above the pelvic brim ; while if the sutures be inserted too low on the anterior abdominal parietes there results a sharp anteflexion of the uterus together with an anteversion, the cervix being carried far back and up toward the promontory of the sacrum, where it may be entirely out of reach. In addition to this unfortunate state of things, the tendency of the fundus uteri to return to its normal position results in serious traction upon the bladder with various functional disorders of that viscus.

The obstetric sequels of the operation as demonstrated by Dorland's researches are intensely interesting. Transverse presentations of the fœtus occur with an astonishing frequency, such being noted in 3·35 per cent. of the reported cases. This, as stated by the author, is due to the inability of the uterus to develop in its longitudinal axis as a direct result of the fixation, a compensatory growth occurring in the transverse axis, which thereby becomes the longer, and most readily accommodates the growing embryo and fœtus. Painful traction upon the site of fixation ; a marked aggravation of the normal nausea and vomiting of pregnancy ; improper placental implantations (placenta prævia) ; inflammatory affections of the deciduæ and other membranes ; and varying degrees of uterine inertia, rendering delivery by nature difficult or an impossibility or favouring the occurrence of postpartum hemorrhage and puerperal sepsis, are other anomalies recorded after the operation. In over half of the cases, or more accurately in 62·01 per

cent. of the pregnancies, some abnormality was noted, either in gestation, in labour, or in both. Version was performed nine times; forceps were employed eleven times; in four instances Cæsarean section has been performed; retention of the placenta occurred three times; the fœtal mortality was 17·87 per cent. and the maternal mortality 1·11 per cent. These statements are quite sufficient to indicate the truly serious results that may follow the apparently harmless operation of abdominal hysteropexy, and the question now arises—Are we justified in performing that operation in young women, or in those in whom the possible occurrence of pregnancy may exist? It may be that a strict observance of the proper technique as already suggested, may largely do away with subsequent complications, but this has not been positively demonstrated as yet.—A leader in the *Journal of the British Medical Association, December* 26, 1896.

113.—ON SENILE ENDOMETRITIS.

By G. Ernest Herman, M.B. Lond., F.R.C.P., Senior Obstetric Physician to the London Hospital, &c.

[The following is taken from Dr. Herman's paper:]

This is so rare a disease that I know no good account of its morbid anatomy.

Symptoms and course.—The symptoms are copious purulent discharge, often mixed with blood; pain, which may be so bad as to keep the patient awake at night; and sometimes wasting. The discharge is the invariable symptom: pain and wasting may be slight or absent. The disease begins after the menopause. No connection has been shown between it and any condition existing during menstrual life. We know nothing as to its causation. It occurs in the virgin, the nulliparous, and the parous; I know not in which it is, relatively to their numbers, the most frequent. It has little or no tendency to spontaneous cure. I have seen one case which had gone on for four years. In some, notwithstanding the persistence of the disease, the condition of the patient changes little. In others, the course of the disease is clinically that of cancer. In a case published by Matthews Duncan this was so. There was a post-mortem examination, and no disease except that in the uterus was found: microscopic examination of the uterus showed no cancer, but only chronic endometritis. In other cases the uterus has been removed during life, because the disease was thought to be cancer. In some cases of cancer of the uterine body, as in one which I have elsewhere published (*Obst. Trans.*, Vol. xxxiii., p. 91), the growth for a long time does not project on the surface of the endometrium, and if the cavity is explored

before there is any projecting growth to be felt, the case will be taken for endometritis. If you scrape away bits which show no sign of cancer when examined microscopically, this does not disprove cancer; for it may be present at some other part of the uterus, though not in the bit you have detached. These two facts—(*a*) that the disease is hard to distinguish from cancer in an early stage, (*b*) that it sometimes runs the same clinical course as cancer—lead me to think that if milder treatment does not quickly produce decided benefit, it should not be continued, but the uterus should be removed.

Treatment of senile endometritis.—When consulted by an old woman about a copious purulent vaginal discharge the vagina should be first treated. Swab the vagina out with strong carbolic acid, and prescribe frequent astringent injections, such as zinc chloride, 5 to 10 grains to the pint. Begin with the weaker and increase the strength if necessary. Repeat the application of strong carbolic acid two or three times, if necessary, with weekly intervals. Take care that none goes on the vulva. If discharge comes from the uterus, there may be so little of it as not to trouble the patient when the vaginal discharge has been stopped. If treatment of the vagina does not abolish the discharge the cervix should be dilated with laminaria tents, and the interior of the uterus explored. If growths are felt they should be scraped away and examined with the microscope. If there are no outgrowths the endometrium should be scraped with a blunt curette, any bits detached reserved for the microscope, and then the interior of the uterus swabbed with strong carbolic acid or lin. iodi. This will almost always remove the symptoms for a time. If after a short interval they return, and become as bad as before, the best treatment is to remove the uterus. Matthews Duncan advised the injection of mild astringents into the uterine cavity through a hollow sound. His great authority makes me think this worth trying in a patient averse to operation. Duncan says it often fails; and I expect little from it.—*Treatment*, *March* 11, 1897.

114.—THE VALUE OF THE SPIRAL WIRE STEM IN THE TREATMENT OF OBSTRUCTIVE DYSMENORRHŒA.

By Alexander Duke, F.R.C.P. I., Cheltenham.

[Every one will agree with Mr. Duke that the greatest care must be taken against any risk of infection in these cases. If it is not possible to safeguard against such risk the treatment should not be adopted. It would be an indescribable calamity if a fatal septic peritonitis should originate in this way.]

It is now some years since I designed this form of intra-uterine stem, and have found it give excellent and permanent results in the treatment of obstructive dysmenorrhœa. So far as I am aware, the rigid stem was the only form in use (which necessitated the recumbent position) until Dr. Robert Barnes brought to the notice of the profession a galvanic stem, consisting of alternate layers of zinc and copper wire. This stem was not designed for the treatment of dysmenorrhœa, but as a means of conveying a weak current by the action of the secretions to infantile and undeveloped uteri, &c. The great differences existing between Dr. Barnes' stem and mine are that mine is composed of only one wire (copper), as I find it is not acted on by the uterine secretions (which are alkaline in character), and also the stem is *fully open above and below*, to allow of the escape of the secretions, which almost always exists in these cases.

In the discussion at the last British Medical Association Meeting (Carlisle) this subject was ably dealt with, and some of the speakers alluded to the great difficulty of preserving the permanent patency of the cervical canal after either rapid dilatation or the cutting operation. If one of my spiral wire stems be inserted *at once*, and worn sufficiently long, there will be no return of the contraction, so far as my experience teaches me; and another great advantage is, it can be worn while the patient is up and about, the important point being to keep parts regularly syringed daily. The stem acts as a drainage tube, and often, by its presence alone, corrects irregularities and helps largely in the cure of endometritis. I can strongly recommend a trial of the stems in these cases.

I prefer rapid dilatation of the uterus, as a rule, to the cutting operation; but in either case the stem should be introduced *directly afterwards*, and the patient kept in bed for one week at least. With regard to the time the stem should be worn, my former rule was to remove it in three months after operation. I have since found it better to allow it to remain till it becomes loose or shows a tendency to come away of itself. As a rule, I have found no trouble with these stems, but on two occasions, pain being complained of, I found the stem plugged by secretions, and on clearing it with uterine sound and syringing all went well. The *absolute importance of vaginal cleansing with hot saline water, either by douche or syringe, should be strictly enjoined on all patients wearing the stems after operation, twice daily for the first week, and then first thing each morning subsequently*, as the secretions are more likely to accumulate during the night while the patient is recumbent. The drainage of uterus is favoured by the upright position, and this was quite impossible when the rigid, solid, and bifurcated spring stems were worn.

My latest modification allows of the stem being easier introduced, as the disc of wire forming the base is hinged and can be placed at any angle, making the stem self-retaining. I have had patients of mine wearing these stems, quite unconscious of their presence, for periods of three, six, and nine months, and one patient of Dr. More-Madden's, Dublin, has worn one for fifteen months, with the result of a perfect and permanent cure.

115.—ATRESIA OF THE GENITAL CANAL.

By Alfred L. Galabin, M.D., F.R.C.P.,
Obstetric Physician and Lecturer on Midwifery at Guy's Hospital.

[The following is taken from Dr. Galabin's paper on "Atresia of the Uterus leading to Retention of Menstrual Fluid." The details of the rare case recorded are omitted here :]

In the greater number of cases, atresia of the genital canal leading to retention of menses is situated towards the lower part of the genital canal, and is congenital. Those that are congenital may be divided into several varieties. The commonest is what is usually known as atresia of the hymen, but it is a question whether that term is always correct. There are many cases in which the upper part of the vagina is free ; there is an obstruction to it about the level of the hymen, but in some cases you may find either that the hymen is distinguishable apart from the obstruction, or else the area of occlusion is too much to be claimed as consisting simply of the hymen. It is probable, therefore, that in many cases regarded as imperforate hymen there is deficiency of part of the vaginal canal above the hymen. In other cases you may get complete absence of the whole vagina ; you may get absence or atresia of the lower part of the vagina while the upper portion is normally developed ; or you may get a short vagina forming a cul-de-sac, and above that a deficiency which generally includes both part of the vaginal canal and also the cervix uteri. I believe the very rarest condition of all, if it ever occurs, is a normal vagina and a normally developed cervix with atresia of that cervix. It is relatively common to have a pinhole os uteri into which it may be impossible to pass the smallest probe, but it is generally not an absolute atresia, and if there is a canal at all the stenosis does not lead to any prolonged and permanent retention of the menstrual fluid ; sooner or later the fluid gets out somehow.

As regards the history of the patients suffering from congenital atresia of the genital canal, the trouble generally

begins with the commencement of menstruation, from thirteen to fifteen years of age. The atresia being complete, of course there is no appearance externally of menstruation at all. The menstrual fluid gradually begins to dilate the canal above the septum. The first thing noticed would be pain occurring pretty regularly at the usual monthly intervals, but without any appearance of flow. Later on, as the collection increases a noticeable tumour begins to be formed ; the vulvar tumour may be noticed first, or that in the abdomen. If it is a case of atresia of the hymen, or if the septum is nearly as low as the hymen, there will very often be a bulging in the vulva and perhaps pain in that situation. As the swelling increases it rises into the hypogastrium and forms an abdominal tumour rising above the pubes, on the top of which may be noticed the characteristic feel of the undistended fundus uteri. In other cases you may have the uterus distended also, and you may possibly be able to recognise the Fallopian tubes as swellings spreading out from each corner of the uterus. The natural terminations of such cases are apt to be unfavourable. The fluid goes on collecting until it escapes somehow or other. Possibly the only favourable termination is that which occurs sometimes in a case in which the septum is formed only of a membranous hymen—namely, when the membrane ruptures externally and the fluid escapes. Even then there is great risk of septicæmia, because it generally bursts by a minute opening, and the fluid only trickles away very slowly ; germs get in and decomposition occurs. This very often leads to a fatal result. If the atresia is more extensive, if it occupies, for instance, a considerable part of the vagina, then it is impossible for it to rupture externally ; and as soon as the Fallopian tube comes to be dilated there is danger of rupture of the Fallopian tube into the peritoneum, leading to peritonitis, probably fatal peritonitis, and that is the ultimate result if relief is not given by operation. In operating on these cases there are three dangers to be avoided. The first is one that exists in all the varieties—viz. septicæmia, decomposition of the retained fluid leading to septic endometritis and peritonitis. The other two forms of danger do not apply so much to cases simply of hæmatocolpos arising from an imperforate hymen ; they are more to be dreaded when the atresia is of greater extent in the vagina or extends higher up the cervix uteri, and in which, in consequence, the distension earlier reaches the fundus uteri and the Fallopian tubes. In making the opening injury may be done to bladder or rectum ; a dilated Fallopian tube may tear at the time of the operation or shortly after, and lead to escape of retained fluid into the peritoneum and consequent peritonitis. The last danger is an actual one, but probably not commonly realised.

My own view is to make a free opening at the outset, and only to use the precaution of not in any way hastening the flow by pressure from above or handling in any degree the tumours that may be felt in the abdomen. Supposing that any spasmodic contraction of the uterus or the tube does occur during the outflow of the fluid, it seems to me obvious that there is very much more risk, supposing there is a slight tear, that fluid should be forced into the peritoneum if there is only a small opening at the vulva, so that there is an obstruction to the outflow of the fluid there. A further point is, having allowed this fluid to escape without hastening it in any way further than by giving it a free outlet, at once to wash the cavity thoroughly out with some antiseptic, without waiting for any decomposition. One great reason for doing that is the tenacious, treacly consistence of the fluid, which cannot easily flow away completely, and is very likely to decompose unless the cavity is thoroughly washed out. The risk of fluid escaping into the peritoneum from the Fallopian tube would arise from the fimbriated extremity being torn away from its adhesions as the tumour collapses. I do not think that is a very likely incident, because if the fimbriated extremity is adherent to the intestines, or omentum, those will probably be free to follow it in its descent. If, on the other hand, the fimbriated extremity is adherent to the pelvic wall, it would probably be at the bottom of the tumour formed by the distended tube. In choosing one's antiseptic I think it is probably desirable to pay some reference to the possibility of some little opening at the Fallopian tube and to use a non-poisonous one. I have usually employed a solution of tincture of iodine, about one or two drachms to a pint of water ; but I should now perhaps be inclined to prefer a modern antiseptic—such as chinosol—in a strength of about 1 in 1,000 or 2,000. If it is merely a case of hæmatocolpos in which the fundus uteri is recognised as undilated, I think there would be no fear of the Fallopian tube being dilated, and one may use the most powerful antiseptic—viz. perchloride or iodide of mercury—say 1 in 2,000.

The final lesson I would urge, is that the best mode of preventing that risk is not only to wash out with antiseptics at once, but to use the utmost possible precautions to keep the whole cavity that you can reach aseptic, and so minimise the chance of germs reaching any retained fluid in the Fallopian tube. The best way of doing that is, as soon as the antiseptic douche has been used and the fluid washed away as thoroughly as possible, to pack the whole cavity as far up as you can reach with iodoform gauze, not very tightly, but with sufficient looseness to enable the fluid to ooze through. The gauze then acts as a drain. The Fallopian tube can probably empty itself slowly

through that gauze, while the presence of the gauze checks the decomposition within the uterus cavity ; and although iodoform gauze is not a very powerful germicide, yet it has a very considerable power in retarding the proliferation of microbes, and a cavity of this sort it will generally keep sweet for several days. I should further advise changing it at the end of twenty-four hours, using another antiseptic douche at that time, and then renewing the plug.—*The Practitioner, April*, 1897.

116.—DISPLACEMENTS OF THE UTERUS.

By Dr. Howard Kelly, Baltimore.

The author in a recent article in *American Journal of Medical Sciences*, December, 1896, states that backward displacements constitute one of the most important gynæcologic questions of the day, for two reasons: first, because of the frequency, and second, because the treatment is in an evolutionary stage. After a summary of the causes, symptoms and discarded older methods, he says :—"The most efficient plans of modern treatment, where treatment is required, are purely surgical, attacking the displacement either through the vagina or abdomen, or through both avenues at once. The correct method of dealing with any given case of retrodisplacement will fall under one of the following heads :—(1) Cases in which no treatment is required ; (2) the use of a pessary ; (3) manual reposition and massage ; (4) operation upon the vaginal outlet ; (5) operation on uterus at the vaginal vault ; (6) shortening the round ligaments ; (7) a suspensory abdominal operation or ventrofixation ; (8) an operation upon the vaginal outlet and a suspensory operation combined." No treatment is advised where the flexion is the discovery of accidental examination, or where the patient's distress is purely mental. On the use of the pessary he contends that its use in retroversions and retroflexions rarely effects a cure, in spite of the numerous statements to the contrary, that it is often useful in relieving local symptoms of the displacement, as a rule not by correcting the displacement but by checking the tendency to still greater displacement. The only pessaries he finds use for are the Hodge and frequently the Mundé with a thick posterior bar. The large pessaries, horse-pessaries, are to be absolutely rejected, as also all soft-rubber pessaries. Processes for treatment under the headings of "manual reposition and massage" and "the vaginal operation for retroflexion" are then followed by an interesting account of his method in treatment of ventrofixation or suspension of the uterus, which he has

applied on two hundred cases in the Johns Hopkins Hospital between October, 1889, and October, 1896. In no case has there been a death in any way connected with the operation, and no case of hernia or interference with the functions of the bladder has been reported. After carefully preparing the selected patient the operation is performed as follows :—"An incision 3 to 4 cm. long is made just above the symphysis pubis, in cases in which the abdominal walls are thin or of medium thickness. . . . The peritoneum is opened the full length of the skin-incision, and caught at once on both sides with forceps and drawn outward. One or two fingers are now introduced through the incision, and the fundus of the uterus caught and raised into anteflexion. I invariably use as a suture material for suspending the uterus, a medium-sized silk about a half millimeter in diameter. . . . One side of the incision is lifted, exposing the peritoneal surface of the anterior abdominal wall. The movable peritoneum and subperitoneal tissues are then transfixed 1 or 2 cm. away from the lower angle of the incision. The tissue taken in is about 1 cm. in width and 2 or 3 mm. in depth ; the same suture is passed through the posterior face of the uterus 1 or 2 cm. back of the fundus, and finally brought out through the peritoneum and subperitoneal tissue on opposite of abdominal wall at a point corresponding to that of entrance. When the suture is tied it brings the uterus up snugly against the anterior abdominal wall in anteflexion. Another suspensory suture is passed like the first, but about 1 cm. higher up on the abdominal wall and half a cm. below it on the posterior surface of the uterus to hold the uterus in permanent anteposition. This is tied and the abdominal wound closed by sewing up the peritoneum with a catgut suture, then drawing the fascia together with silver wire mattress-sutures, finally closing the superficial fat and skin also with catgut sutures." Treatment of backward displacements by an operation upon the vaginal outlet and a suspensory operation combined is given. In his recapitulation of the subject, he says :—"My conclusion in the whole matter would be that operative measures are only to be resorted to for the relief of retroflexion in those cases in which there is good reason to believe that the displacement seriously interferes with the patient's health and comfort. Then if the case is one calling for operation in a woman who has borne children, first look well to the vaginal outlet, and restore it if is broken down. The Alexander operation, as performed by Edebohls, will yield excellent results ; my personal preference is to deal directly with the retroflexed body of the uterus by a suspensory operation."—*Journal of the American Medical Association, January* 9, 1897.

117.—PAN-HYSTERECTOMY.

By M. U. O'Sullivan, L.R.C.P. Ed., Melbourne.

[The following is taken from Dr. Sullivan's paper, read before the Melbourne branch of the British Medical Association :]

In a paper on hysterectomy, read before this branch about five years ago, I ventured the opinion that "in all cases where the tumour cannot be removed without the uterus, the operation of the future must be extirpation of the whole organ, thereby avoiding any tinkering with the pedicle." Though having previously done many extirpations by the extra-peritoneal method, and for a long time a warm advocate of Schroeder's operation—supra-vaginal amputation, with ligature of the uterine arteries and intra-peritoneal treatment of stump—I cannot now help expressing my entire approval of the great change that has occurred during the past few years in favour of complete extirpation. It has been said that the pelvic floor is weakened, and that vaginal hernia is liable to follow the operation of complete extirpation, but such a contingency is purely theoretical and has never been observed in practice. The intra-peritoneal methods of Zweifol and Schroeder are no longer necessary, and would seem to be doomed to the oblivion that has at last overtaken the incomplete and older method. Of course one will meet with tumours occasionally not amenable to each of those methods of operation. For instance, supra-pubic amputation is not applicable to fibroids which burrow between the layers of the broad ligament and into the floor of the pelvis, or to those which are septic; but total extirpation may be applied to every variety of tumour, and can be performed as expeditiously, and with as little risk to the patient from immediate ill-effects, as any of the methods heretofore practised; while the after-condition and remote effects give it a most decided advantage over all other procedures. It must not be lost sight of, too, that there are other considerations than the character of the tumour which should influence us in arriving at a final decision as to the scope and limits of the operation to be performed, such as the general physical condition of the patient, her position—whether she can afford the rest and secure the comforts necessary to palliative and minor surgical treatment, &c.

I am sure that every surgeon of experience in the operation of abdominal pan-hysterectomy will admit at once that the chief difficulties are encountered in dealing with the floor of the pelvis and roof of the vagina. It has long appeared to me that a suitable vaginal guide should not only materially facilitate operative technique at this juncture, but obviate the danger

of encroaching too much on the roof of the vagina. In my first six cases of complete extirpation I resorted to the abdominal-vaginal method, commencing the operation vaginally, as in the first stage of vaginal hysterectomy; but this method is open to the objection that, upon opening the peritoneal cavity, some special indication may be found against completing the operation on the lines originally intended—leaving the patient with an aimless vaginal wound to still further hamper her recovery. Bowreman Jessett, to whom we are so much indebted for the improved treatment of the peritoneal flaps, &c., in this operation, used a Ferguson's speculum, pushed up by an assistant as a guide; but the difficulty—or, rather, I should say, the hopelessness—of keeping the vaginal cervix in the vast majority of "fibroids," within the lumen of a speculum is at once obvious. Other surgeons have used the finger of an assistant—pushed up into the vagina as a guide to cut down upon, but this is a procedure not likely to recommend itself to the precise and careful operator. The vaginal forceps and director which I have used in four cases with much advantage and the greatest satisfaction, was made to my order by Mayer & Meltzer, of this city. [Three cases, with two recoveries, are then recorded. The following are the details of the operation :]

A Sim's speculum was passed and the vagina thoroughly scrubbed with a 1 in 500 perchloride solution. The cervix was now grasped with the "combined vaginal forceps and director," the blades of which were firmly locked, and the patient returned to the supine position. The abdomen was opened by a free incision, extending from above the umbilicus to within a short distance of the pubis, and the tumour "delivered"—this being very materially facilitated by an assistant steadily pushing the tumour and uterus towards the abdominal cavity, on the forceps and director, within the cup-shaped end of which the cervix sits, firmly held; and here, too, I would claim that there is a decided advantage in being able to dispense with—in many cases—the ponderous prehension forceps, generally used for elevating uterine fibroids through the abdominal wound during operation, and so prevent the annoying hemorrhage which sometimes takes place from forceps punctures of such tumours. The broad ligaments were divided between two rows of ligatures, and the usual peritoneal flaps dissected down off the anterior and posterior surfaces of the uterus with blunt scissors and finger. The uterine arteries were now easily picked up on an aneurism needle and secured—outside the reflected peritoneum. The vagina was now fearlessly opened by running a knife around the cervix, within the hollow of the vaginal director, which was still steadied by an assistant and easily felt. Now, instead of suturing the peritoneal flaps after the manner of Martin,

Treves, Smith, and others, and as I have done myself in 17 cases, I passed about a half-dozen long silk sutures through the edges of the peritoneal flaps and drew them into the vagina, as suggested by Bowreman Jessett, thus completely closing the peritoneal floor. With a Sim's speculum the vagina was now well packed with iodoform gauze, firm traction being kept up on the flap sutures during the packing. The abdominal wound was closed with deep silkworm-gut and superficial horse-hair sutures. I may be allowed to say here that whenever I have thought it advisable to drain the peritoneal cavity, after pan-hysterectomy, I have generally done so with a Keith's tube, passed per vaginam, between the edges of the peritoneal flaps. In a few cases I have used a strip of sterilised iodoform gauze, with the best results. The bowels were freely opened on the second day with mag. sulph., supplemented by irrigation of the lower bowel. The packing (vaginal) was removed on the fourth and the sutures on the eighth day. The patient made a perfect recovery.—*Australasian Medical Gazette, November* 20, 1896.

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